

# The Chemical Age

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**NOTICES:**—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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## Discussions and Developments

THE rumours and counter-rumours that have been current in regard to discussions between the British and German chemical combines will, it seems, shortly be dissipated by some real news. Of late, hints of discussions have been more and more definite; it is said that recently representatives of Imperial Chemical Industries were in Germany, and the lay Press has been full of accounts of the terms of bargains. In a recent interview, which was published in *The Morning Post*, Sir Alfred Mond took the reasonable course of correcting certain impressions which seem to have been formed in the minds of those ignorant of the real position of the British chemical industry and its relations with foreign industry. In the first place, he pointed out that there is no possibility of a shortage of necessary materials in case of national emergency, since the production of synthetic ammonia (a fundamental substance) has been placed on a firm basis.

It is necessary to add that it was probably very far from the intention of the chairman of I.C.I. to lay undue stress on the war aspect of chemical industry, but the plain fact is that many people are unable to take a reasonable view of any developments which may occur if they are not first of all reassured with regard to the safety of the country. It is as well,

therefore, that Sir Alfred Mond has made clear the point in question. He did not, however, stop there, but went on to point out that he did not consider that British chemical industry was inferior to that of Germany. In fact, having firmly disclaimed the view that cheap production was necessarily bound up with low wages, he went on to point out that in regard, for example, to synthetic ammonia, production costs in this country were as low as, or lower than, those of other countries. Coming from such a source, this statement is obviously one of great importance.

The main point of Sir Alfred's statement, however, was concerned with the question of the discussions between Imperial Chemical Industries and the I.G. "No negotiations with any group in a foreign country will be allowed to interfere with the expansion of the chemical industry in Great Britain or in the Empire . . . Far from it being in our minds to conclude any agreement which would tend to give advantage to Germany at the expense of Great Britain, the whole trend of any discussion has been to get for the British Empire such advantages of new inventions as synthetic oil, and to form a harmonious mutual interchange of inventions, processes and ideas, of which we have as many as any other country . . . Our negotiations with the Dye Trust are in no way sensational. There can be no question of amalgamating, but only of discussing points of common interest, which has been the practice of every great firm or combine in the world."

It is of special interest that Sir Alfred should have touched on the question of synthetic oil. For some time past the position of the I.G. process for the production of oil from coal has been rather puzzling. In view of the statements, freely made a short time ago, that a modified Bergius process had been put into large scale operation, it has seemed strange that no information has been available with regard to the appearance of the product on the market. According to reports from Germany, it is now believed that the I.G. is completing its arrangements for this final phase, and it is expected that commercial use of the oil will begin towards the end of this year. The German railway companies are said to have agreed to transport the oil at a rate lower than that which usually applies to such products. One rather surprising fact which emerges is that although it has been generally thought that the only full-scale plant for the liquefaction of coal was that at Leuna, plants are also in operation at Ludwigshafen and Kötschen, the existence of which has hitherto been withheld from public knowledge.

The German Press has been quoting statistics in regard to the matter which, although possibly exaggerated, are worth noting. It is said that contracts for the delivery of 120,000 tons of oil in the present year have already been concluded, and that during

1928 the capacity of the Leuna plant (which has been working at maximum production for some months) will be raised to 300,000 tons a year. The Winkler generators which are operating the process at Leuna are liquefying 4,000 tons of coal daily. 12,700 men, it is stated, are engaged in erecting further factories and plant; while it is hoped to double the output of the I.G. lignite mines in the Geissel valley. The most remarkable statement, which is quite at variance with the information hitherto available, is that the low cost of production of the new fuel will render possible a scale of prices which will permit of competition with natural oils both at home and abroad. It is difficult to assess the value of all this at the moment. In view, however, of the situation created by the last great achievement of synthetic chemistry—the production of nitrogen compounds from the air—it would be as well to prepare for some surprises, though the positions in the two cases are so different that it cannot be expected that events in both will follow parallel courses.

### The Chemical Trade Returns

It is always difficult to assess the proper value of statistics, and the difficulty is especially great at the moment. The last three years have been entirely unlike one another. In 1925 industry was pursuing a more or less normal course. In 1926 the coal and general strikes occurred, with their consequent paralysing action. In the present year we have been engaged in clearing up the situation and in returning to normal conditions. These facts may sound like truisms, but there is no doubt that unless they are kept firmly in mind, any consideration of figures is perfectly useless. If the very valuable information provided by the Board of Trade is to be of proper service, it must be examined in such a way that any comparisons made with the past are real ones.

Looking at the matter from this point of view, we find, for example, that as regards the imports of chemicals, drugs, dyes and colours, the value for the month ended August 31 was £1,083,545, a decrease of £161,972 on the value in 1926, and an increase of £30,206 on 1925. The value of imports for the first eight months of the year was £10,261,632, an increase of £200,803 on 1926, and of £551,572 on 1925. Considering the small increase on the month of August as regards the comparison of 1927 with 1925, we may fairly say, in spite of the disproportionately larger figure for the first eight months, that the position is satisfactory. We have recovered the lost ground. What of the export position? Exports for the month of August amounted to £1,780,766, an increase of £251,326 on 1926, and of £41,199 on 1925. For the first eight months of the year, exports were valued at £15,122,714, a decrease of £46,810 on 1926 and of £1,009,588 on 1925. Here again it will be observed that in comparison with 1925 (the last normal year), the figure for the month of August is quite good, although the figure for the whole eight months of the year looks so different. Keeping all the facts in mind the position is as follows: In the early months of this year, industry was heavily disorganised, and not

until the year was somewhat advanced did it get into its stride. As a result of this the earlier months resulted in the piling up of figures which appeared rather depressing when compared with the last normal year. It is clear from this month's figures, however, that we have entered on a new phase. Industry is now working at normal pressure, and the 1925 figures are being equalled or beaten. Unless very unexpected things happen, it seems certain that in the next few months there will be a still further improvement. By the end of the year, it is likely that, even in comparison with 1925, chemical industry will be able to make a very good show; while it appears that the monthly returns are likely to be increasingly favourable.

In regard to exports of imported merchandise, a rather curious position has arisen. The value for August was £62,406, a decrease of £8,659 on 1926 and of £36,918 in 1925. For the first eight months of the year, the value was £608,268, a decrease of £87,450 on 1926 and of £237,137 on 1925. It is very difficult to form a definite opinion of the real meaning of these figures, complicated as they are by a number of factors. In the circumstances, it would perhaps be wise to defer judgment until more data are available.

### Phosphoric Acid by Volatilisation

SEMI-TECHNICAL experiments have shown that it is not difficult to obtain almost complete volatilisation of phosphorus from mixtures composed of the constituents demanded by the equation:—



It is, however, an advantage to add an excess of 20 per cent. of both coke and sand. A simple type of crucible furnace can be used, and suitable provision for the removal of the slag by means of a bottom tap-hole must be arranged. Three-phase alternating current is satisfactory, this being "stepped down" from 220 volts by two single-phase 75 kilo-volt-ampère transformers. No difficulty arises in ensuring the volatilisation of the phosphorus. What is much more formidable is to recover the phosphorus pentoxide—the oxidation product of phosphorus—since its absorption in water can only be completely effected by rather elaborate systems of sprays, baffles, or dividing walls. Even then, it is impracticable to collect all the phosphorus pentoxide fumes in the form of phosphoric acid.

The Cottrell method of electrical precipitation has been resorted to, and after some preliminary experimentation it has been demonstrated that it is not only successful, but that it possesses advantages over the water absorption system.

An examination of the theoretical heat balance of an electric furnace (simple crucible or shaft type) suggests that in this country it will be preferable to have recourse to a smelting furnace. After all, the chief function of the electric current is for attaining a temperature necessary for the reaction. Logically, if this condition can be secured by employing fuel as the source of heat in lieu of the electric arc, considerable economy can be effected. Laboratory experiments have revealed that with covered crucibles in an

injection furnace, where a molten slag is obtained and the heating is continued sufficiently long, a very high percentage of the phosphorus is volatilised. When the crucibles are left open a thick white crust is formed, and unless the temperature is raised to the point where the fireclay fuses, the crust evinces no sign of melting into the slag beneath. The ratio of lime to phosphoric acid in the unfused material closely approximates to the ratio of those constituents in calcium pyrophosphate.

These experiments point to the importance of maintaining reducing conditions in the phosphate charge, and indirect heating suggests itself. Trials of the method have been made, but were soon abandoned as impractical; little or no slag is obtained, and only a relatively small quantity of phosphorus is evolved from the sintered product. Further experimental work has shown that with briquettes made up of run-of-mine phosphate with silica and lime in the proportion of 59 : 41, and with 14 per cent. of coke to obtain optimum reducing effect, 40 to 50 minutes are required to drive off the phosphorus from the charge at a temperature of 1600° C. In every instance where the silica content is higher, the nearly-complete volatilisation is achieved in a period ranging from 30 to 35 minutes. Another important point has been brought out by experimental work, namely, the possibility of using bituminous coal as a reducing agent in the briquettes, in place of coal.

It is impossible to review the results of all the trials and all the experiments that have been conducted. Suffice it to say that the process, the ultimate success of which is seemingly assured, involves briquetting the charge of phosphate rock, sand, and coke or coal, and the employment of furnaces having certain features of both the open hearth and blast furnace type. These should be built of carborundum bricks, to withstand a temperature ranging from 1500° to 1700° C. Water-cooled oil burners should be used, and pre-heated air for the combustion of the oil should be introduced at a pressure of from 1 to 4 lb. per square inch. The molten slag should be tapped from two water-cooled slag notches. Although the conditions are somewhat onerous, it has been shown that by the use of high-grade refractories and proper water-cooling devices a furnace can be made to resist the combined effects of siliceous slags and the high temperatures (1500° to 1700° C.) attained in the furnace.

### Safety in United States Industry

SOME interesting points are made in the report, just issued, of an inquiry into industrial safety and production in the United States which has been carried out by the American Engineering Council. It is stated that a responsibility, which cannot be evaded, rests upon the managers and executives of industry to make safety a major interest and controlling care. In thus fixing responsibility so definitely, the committee does not place any blame for conditions as they exist, nor for any part of the present situation. It does seek, however, to show where lies the responsibility for initiating imperative improvements.

This engineering-economic investigation, according to the announcement of the findings by the president

of the council, Dean Dexter S. Kimball, of Cornell University, was undertaken as a result of representations by the United States National Bureau of Casualty and Surety Underwriters, by which it was financed, that during the last few years there has been an alarming increase in the number and severity of accidents. After a study of the accident and production performance of twenty industries and sixty product groups based upon an exposure of over fifty billion man-hours, the investigators assert that the truth of the thesis, "The safe factory is the efficient factory, and the efficient factory is the safe factory," has been established. "The evidence also proves," the report continues, "that the accident situation in any factory can be controlled, and that the accident hazard can be steadily decreased. It further proves that that quality and thoroughness of management which secures consistently high efficiency of production as a major objective, will also attain a high safety record as an accompanying major objective."

It is pointed out that during the past decade there has been an amazing increase in the productivity of the individual American industrial worker, and an accompanying decrease in the accident cost assessed against each unit of product. But the hazard per man-hour has increased, and is a cause of serious disquiet. Minor accidents are accountable for a much larger loss of productive time and value than is generally recognised. The report finally urges that executives, trade associations, societies, and other agencies concerned with the improvement of industrial operations should bring to the attention of their members the necessity of improvement in safety performance.

### Books Received

- THE THEORY OF STRONG ELECTROLYTES. A General Discussion held by the Faraday Society, April, 1927. London: The Faraday Society. Pp. 200. 15s. 6d.
- A TEXTBOOK OF INORGANIC CHEMISTRY. By A. F. Holleman. New York: John Wiley and Sons, Inc. London: Chapman and Hall, Ltd. Pp. 542. 17s. 6d.
- COLLOIDS. A TEXTBOOK. By H. R. Kruyt. New York: John Wiley and Sons, Inc. London: Chapman and Hall, Ltd. Pp. 262. 17s. 6d.
- NOXIOUS GASES. By Yandell Henderson and Howard W. Haggard. New York: Chemical Catalog Co., Inc. Pp. 220. \$4.50.
- THE ROYAL TECHNICAL COLLEGE CALENDAR, 1927-28. Glasgow: Robert Anderson, 142, West Nile Street. Pp. 420.
- UNIVERSITY OF MANCHESTER. PROSPECTUS OF UNIVERSITY COURSES IN THE MUNICIPAL COLLEGE OF TECHNOLOGY. PROSPECTUS OF PART-TIME COURSES IN CHEMISTRY AND CHEMICAL TECHNOLOGY, Session 1927-28.

### The Calendar

Sep. 8-24	Shipping, Engineering and Machinery Exhibition.	Olympia, London, W.
21	Inauguration of Research Station and Laboratory of the Research Association of the British Paint, Colour and Varnish Manufacturers.	Clarence Hotel, Ted- dington.
23- 26	Association of Special Libraries and Information Bureaux. Fourth Conference.	Trinity College, Cam- bridge.
24-	World Fuel Conference.	Imperial Institute, South Kensington, London.
Oct. 6		
Sept 26	Eleventh Annual Exposition of Chemical Industries.	Grand Central Palace, New York, U.S.A.
Oct. 1		

## **Chemical Trade Returns for August**

A Much More Hopeful Tone

THE Board of Trade returns for the month of August indicate that during the month imports of chemicals, drugs, dyes and colours were valued at £1,083,545, a decrease of £161,972 on the corresponding period in 1926; exports were valued at £1,780,766, an increase of £251,326; and re-exports of imported merchandise were valued at £62,406, a decrease of £8,659.

For the eight months ended August 31, imports were valued at £10,261,632, an increase of £200,803 on the corresponding period in 1926; exports were valued at £15,122,714, a decrease of £46,810; and re-exports were valued at £608,268, a decrease of £87,450. The detailed returns are as follows:—

**Re-Exports**

	Quantities.		Value.			
	Month ended August 31,	1926.	Month ended August 31,	1926.	1927.	
CHEMICAL MANUFACTURES AND PRODUCTS—						
Acid Tartaric . . . . cwt.	147	208	790	1,485		
Borax . . . . .	—	193	—	193		
Coal Tar Products value	—	—	1,465	7		
Glycerine, Crude . . . . cwt.	—	—	—	—		
Glycerine, Distilled . . . .	—	—	—	—		
Potassium Nitrate (Salt-petre) . . . . . cwt.	34	114	62	131		
Sodium Nitrate . . . . .	472	1,980	337	1,362		
Tartar, Cream of . . . . .	236	612	1,022	2,984		
All other Sorts . . . . . value	—	—	10,895	11,060		
DRUGS, MEDICINES, ETC.—						
Quinine and Quinine Salts . . . . oz.	13,852	14,863	1,520	1,707		
Bark Cinchona, etc. cwt.	66	349	309	1,415		
All other Sorts . . . . value	—	—	46,442	33,828		
DYES AND DYESTUFFS—						
Cutch . . . . . cwt.	905	1,467	1,343	2,440		
Other Dyeing Extracts . . . . cwt.	603	113	2,496	1,030		
Indigo, Natural . . . . .	—	8	—	215		
Extracts for Tanning . . . . cwt.	446	412	653	686		
PAINTERS' COLOURS AND MATERIALS . . . . cwt.	896	949	3,204	3,309		
Total of Chemicals, Drugs, Dyes and Colours . . . . value	—	—	71,065	62,406		

**Cordite Factory Explosion****Friction Causes Nitroglycerine to Explode**

THERE was an explosion in the acetone-recovery plant of the Royal Naval Cordite Factory, Holton Heath, Dorset, on Saturday, September 10, as a result of which three men (E. H. Lovell, W. A. Barnes, and V. Coward) were killed.

An inquest was held at the factory on Tuesday. The foreman of plumbers, George Wilson, said that Coward and Barnes were working under his orders on Saturday. He sent them on Friday to disconnect the pipes from the main pipe of the acetone recovery building. W. T. Thomson, the works manager, said that cordite was a mixture of nitro-glycerine, gun-cotton, and mineral jelly, and it was mixed with acetone, a liquid. "By that mixing it is formed into dough so that it can be plastic and pressed into cords. These cords are cut into lengths, put on trays, and put into the stoves." Every stove was connected to a pipe which led to the acetone recovery plant in another building. The temperature was kept at about 45 deg. C. to keep the nitro-glycerine from evaporating as much as possible.

"You cannot keep nitro-glycerine from evaporating," said Mr. Thomson, "so we provide in these pipes traps for nitro-glycerine. It was the work of Lovell to go round to these traps and take away the nitro-glycerine that had collected anywhere." Lovell went round and then the tin-smith started to undo the joint. It was the last time they were going to use that system, and, in fact, it was the last joint. "We have never known of nitro-glycerine oozing out of these joints. I have come to the conclusion that only a very slight subsidence through the heavy rain caused a slight sag of the pipe." He thought about half a pound of nitro-glycerine which collected in the pipe at the joint caused all the damage. While Coward was undoing the bolts an explosion occurred, probably, he thought, as the result of friction.

The coroner asked whether Mr. Thomson's opinion was that the cause of the accident was a small quantity of nitro-glycerine collecting at that particular joint owing to a slight sag in the pipe, some slight friction being caused in undoing the bolt, thus exploding the nitro-glycerine in the pipe, and Mr. Thomson agreed. Summing up, the coroner said the actual cause of the accident could only be a matter for surmise. He did not think there was any question but that it was a pure accident. The jury, without retiring, returned a verdict of accidental death.

An official inquiry into the matter will also be held.

**Leather Chemists' Conference****Restrictions on Membership Wiped Out**

THE International Society of Leather Trades Chemists held a conference during the week, at the Leathersellers Hall, London. Delegates were present from France, Italy, Spain, Belgium, Switzerland, Czechoslovakia, India, and elsewhere. Speaking at the commencement of the conference, on Monday, the president, Professor D. McCandlish, of Leeds, said that changes in the grouping of leather trades chemists had taken place, partly as a natural development and partly for reasons arising from the war. The result of these was that at present two strong associations of leather chemists existed, in addition to their own—the American Leather Chemists' Association and the German Society. The amount of research work carried out by individuals and commissions was speedily growing. Work of this type was throwing more and more light upon hitherto unexplained phenomena, and would have a helpful effect upon practical leather production in the future. Dr. A. Gansser, vice-president, moved that from now onward all restrictions on membership of the different societies should be wiped out, especially with reference to Germany and the Central States. Dr. J. Gordon Parker, general treasurer, seconded. The resolution was passed with acclamation.

Professor Dr. V. Kubelka, Czechoslovakia, was elected president to succeed Professor McCandlish, and Dr. J. Gordon Parker secretary. The next conference will be held in 1929, either at Basle or Prague.

**Income Tax Average**

To the Editor of THE CHEMICAL AGE.

SIR,—It might be of interest to your readers to remind them that although the withdrawn average system has ceased to operate generally there are many cases in which it is possible to claim a continuance of the average for 1927-28. The last day for claiming an adjustment is October 5, 1927. Briefly, the claim is that where the first or second year which would normally have come into the average is less than the average of the six years preceding that three-year period, a claim can be made under the above-mentioned section. It may be advisable to take the step, even supposing the three-year average for assessment in 1927-28 is greater than the actual result of 1926-27, where it can be safely estimated that the average for assessment in 1928-29 will be as much lower than the actual of 1927-28 as the 1927-28 average is greater than the 1926-27 actual.—Yours, etc.,

67-68, Cheapside,  
London, E.C.2.

W. R. FAIRBROTHER.

**"C.A." Queries**

We receive so many inquiries from readers as to technical, industrial, and other points, that we have decided to make a selection for publication. In cases where the answers are of general interest, they will be published; in others, the answers will simply be passed on to the inquirers. Readers are invited to supply information on the subjects of the queries:—

74 (Earthenware-porcelain apparatus).—In connection with work on the specific heats of gases a London college requires apparatus of earthenware-porcelain composition suitable for temperatures up to 1,500-1,700° C. The apparatus must not be appreciably porous to gases at these temperatures.

75 (Tartar Emetic and Antimony Salts).—Will you please give us the names of the manufacturers of tartaric emetic and antimony salts in this country?

**British Sugar Beet Society: New Secretary**

At a meeting of the British Sugar Beet Society on Thursday, September 8, Mr. W. T. Chadwin was appointed secretary. Mr. Chadwin has succeeded Mr. Alfred Wood, who resigned the secretaryship at the annual meeting in February but consented to remain in office until a decision had been reached as to the society's future. The offices have been removed to 28, Westminster Palace Gardens, Artillery Row, London, S.W.1, and all communications concerning the society should be sent to Mr. Chadwin at that address. Mr. Chadwin was the secretary and technical adviser of the British Sugar Beet Council, which was formed in 1909 in succession to the Sugar Beet Committee of the Central Chamber of Agriculture.

## The Shipping, Engineering, and Machinery Exhibition

### A Brief Summary of Exhibits of Chemical Interest

*Below is given a preliminary review of the Shipping, Engineering, and Machinery Exhibition at Olympia, where there are many exhibits of interest to chemical engineers and others connected with the chemical industry. The exhibition will remain open until September 24. Next week a detailed description of the exhibits will be given.*

It is interesting to note that the Shipping, Engineering, and Machinery Exhibition, now in progress at Olympia, London, attains its majority this year, the first of the series of exhibitions having been held in 1906. The exhibits are of an exceptionally interesting character, there being more under the heading power than before. One of the noteworthy features of the exhibition is the display of cutting and welding by all methods, and no fewer than eighteen stands are devoted to this branch of industry.

The attention that has been given to the corrosion problem of recent years is well exemplified by many exhibits of stainless and non-staining iron and steel, of non-corrodible alloys, and of protective coverings, paint, and varnish, while the needs of the power plant engineer, who seeks to preserve his boilers from scale, are well met. Among the many boiler scale preventives and removers is a colloidal preparation which contains no soda or deleterious substances, and which is claimed to have no effect whatever on boiler materials; while large water softening plants are much in evidence.

As the exhibition is mainly concerned with shipping, paints and varnishes bulk largely on several stands. There are many representative displays of varnish and enamels for interior and exterior work, for wood and metal, an interesting example of the latter being a steel paint made from the waste filings from drilling operations, which is claimed to be particularly of use on exposed metal parts as a stopping coat, or on parts which have to stand high temperatures or exposure to sea atmosphere, gases, and the like. It is claimed to be superior to iron oxide paint. Another composition for protection against weather, chemical fumes, and damp is made from a lead suboxide pigment in colloidal form, and of course the many makes of bitumen paints and colloidal bitumens are well in evidence.

Pumps, boiler house equipment, machine tools, and high speed tools are strongly represented, as are oil fuel systems, oil separators, and other adjuncts to the power plant.

The gallery exhibits are of an interesting character, and are by no means as is often the case at exhibitions, confined to accessories. Scientific research service for customers is a feature of some of the firms exhibiting, particularly among the metallurgical exhibitors, while a rubber firm gives demonstrations of its research activities in connection with rubber production.

#### New Stainless Steel Wire

An interesting application of stainless steel is to be seen in an exhibit of stainless steel wire drawn to a diameter of 0.00048 in., and which is intended for weaving into screens for finely divided solids, and for use in filters. The production of asbestos for jacketing, packings, and use in filter work is well illustrated, and considerable interest attaches to products made of asbestos and white metal for use where high pressures have to be withstood. Rubber, ebonite, and ebonite substitutes are liberally displayed, one stand showing rubber in the various stages of manufacture, and illustrating the processes with photographs and with examples of the chemicals used at different stages. Another stand is given over entirely to a show of bakelite, vulcanised fibre, leatheroid, and ebonite, in sheets, rods, tubes, and finished parts. There are several liquid gas plant exhibits, in which are shown gas compressors, apparatus for filling cylinders, and illustrations of the use of acetylene and oxygen in welding and also for lighting.

Much space is given to gas analysis and gas control instruments, temperature recorders and regulators, combustion recorders, and measuring instruments of all kinds, in many cases in actual operation on working plants. Several firms illustrated the manufacture and the uses of their exhibits by means of cinematograph films.

A review of the exhibition would be incomplete without mention of the visit of many societies to it. Altogether forty-five societies have been invited. On Monday a visit was paid by the Institution of Gas Engineers and the Institution of Chemical Engineers, on whose behalf Mr. C. F. Broad-

head, engineer to the Metropolitan Gas Co. of Melbourne, expressed appreciation of the exhibition.

#### Visit of the Society of Chemical Industry

On Tuesday it was the turn of the Society of Chemical Industry, the British Chemical Plant Manufacturers' Association, and the Institution of Automobile Engineers. Mr. F. H. Carr said it was with immense pleasure that the members of the Society of Chemical Industry, and he thought of the other societies, had accepted the hospitality of the management. Chemists welcomed any opportunity that presented itself which brought them into contact with engineers, for the success of their work depended on the harmony with which they could work with the latter. The exhibition, he considered, was a lesson in the progress that had been made in this country in many directions. They would go away with many ideas, in connection with the exhibits they had seen there, which they might utilise. In concluding he expressed, on behalf of the members of the societies assembled there, thanks to the management for the hospitality which had been extended to them, in which he was seconded by Major Beaumont.

Among the members of the Society of Chemical Industry who were present were the following: Mr. F. H. Carr, Mr. W. J. U. Woolcock, Professor G. T. Morgan, Mr. J. L. Baker, Dr. W. R. Hodgkinson, Mr. George Gray, Mr. C. S. Garland, Dr. Percy May, Mr. W. S. Calder, Dr. W. R. Ormandy, Dr. J. P. Longstaff, and Dr. Stephen Miall.

#### Vacant Appointments

A Chair of Chemistry in the University of Melbourne, Australia. £1,200. The Agent-General for Victoria, Victoria House, Melbourne Place, Strand, London, W.C.2. October 1.

An Assistant (Grade 1) in the Directorate of Metallurgical Research Research Department, Woolwich. £370—£20—£550 plus bonus. The Chief Superintendent, Research Department, Woolwich, London, S.E.18.

An Assistant Examiner of Questioned Documents under the Government of India, with knowledge of chemistry, especially analytical chemistry, and of physics and photography. The Secretary to the High Commissioner for India, 42, Grosvenor Gardens, London, S.W.1.

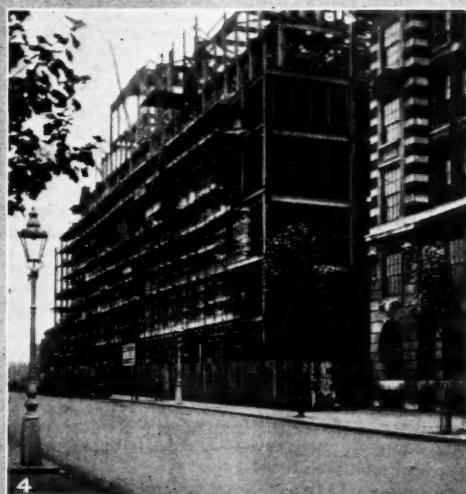
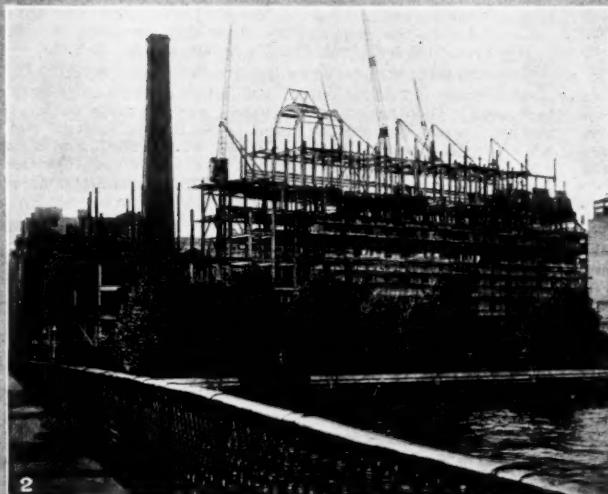
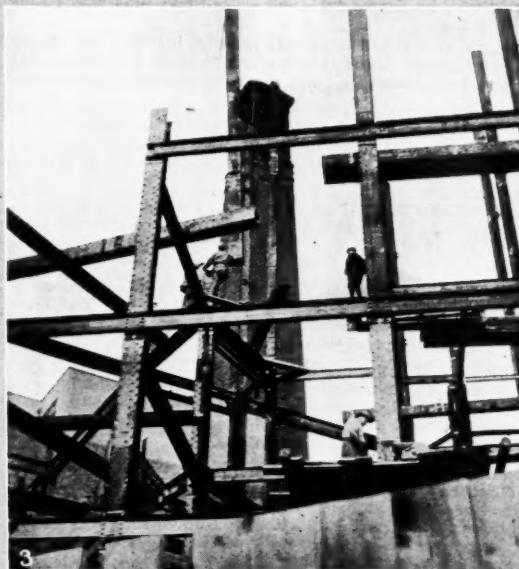
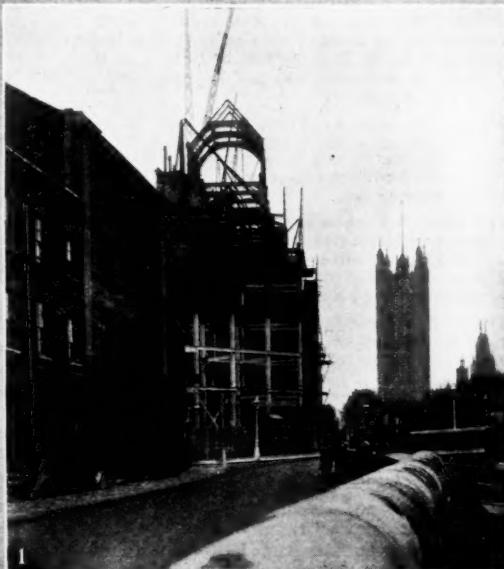
An Analytical Chemist for the Medical Department, Tanganyika Territory. £600—£30—£720. The Private Secretary (Appointments), Colonial Office, 38, Old Queen Street, London, S.W.1. October 1.

A Lecturer in Chemistry in the University of Western Australia. £450—£550. Office of the Agent-General for Western Australia, 115, Strand, London, W.C.2. October 1.

#### The City Tours

This week's city tour, arranged by THE CHEMICAL AGE for its readers, and led by Mr. Allen S. Walker, took place on Tuesday. The first place visited was the church of St. Martin Ludgate. From here the party passed on via Paternoster Row, Amen Corner, and Ave Maria Lane to the Stationers' Hall, this particular route having been chosen in order to trace out the path travelled by the choir and clergy of St. Paul's in pre-Reformation times. At the hall of the Stationers' Company (of which Sir Ernest Benn, chairman of the publishers of THE CHEMICAL AGE, is a member), Mr. Walker discussed the rise and development of the City guilds and companies. The party was entertained to tea at Bouvierie House. The next tour will take place on Wednesday, September 21, and will include St. Andrew's-by-the-Wardrobe and the site of Shakespeare's Blackfriars Theatre. Tickets may be obtained from the Editor.

### The New Headquarters of I.C.I.



(1) VIEW FROM GROSVENOR ROAD.

(2) FRONT VIEW, FROM LAMBETH BRIDGE.

(3) SWINGING A GIRDER INTO POSITION AT THE SOUTH-WEST CORNER.

(4) VIEW FROM VICTORIA TOWER GARDENS, MILLBANK.

*The Chemical Age Photos.*

*The above photographs show different views of the new headquarters building which is being erected at Millbank, London, S.W., for Imperial Chemical Industries, Ltd. The architect is Sir Frank Baines, late of H.M. Office of Works, and the contractors are John Mowlem and Co., Ltd. Apart from the excavations, the building has only taken about three months to reach its present stage.*

## From Week to Week

THE NEW ROCKEFELLER SCHOOL OF BIOCHEMISTRY at Oxford will be opened by the Lord Chancellor, Viscount Cave, on October 21.

A GAS SECTION, formed on a large scale, will be a notable addition to the Birmingham section of the British Industries Fair to be held in 1928.

THE PREMISES OF FILM WASTE PRODUCTS, LTD., Redhill Street, St. Pancras, were on September 9 the scene of a fire in which four girls lost their lives.

ALL ACTIONS AND COUNTER-CLAIMS pending between Dr. Henry Dreyfus and Captain Alfred Loewenstein and the International Holdings and Investment Co., Ltd., have, it is stated, been withdrawn.

NO DIVIDEND IS TO BE PAID by Holzverkohlungindustrie A. G., which, with Verein für Chemische Industrie, Frankfort-on-Main, controls local production of wood-distillation methanol, on 1926-27 working.

SALES OF CHILEAN NITRATE OF SODA under the free selling system for the fortnight ended August 31 amount to 131,284 metric tons for delivery up to June, 1928, making the total of such sales 1,447,493 metric tons.

THE ROYAL AERONAUTICAL SOCIETY and the Institution of Aeronautical Engineers have decided to amalgamate. The first-named body is the oldest aeronautical society in the world, while the Institution is of post-war origin.

MR. C. WILBUR MILLER, president of the Davison Chemical Co., and of the Silica Gel Corporation, returned to New York on August 19 from a European trip undertaken in the interests of silica gel. Mr. Miller is believed to have concluded some profitable arrangements in Europe for the use of silica gel patents.

DISCUSSIONS ARE REPORTED from Chile between the Government and the Nitrate Producers' Association with a view to arranging some protective clause for buyers of the commodity in the event of a reduction in the export duty after June 30, 1928. It is stated that the Government is now seriously considering a reduction in the tax after that date.

THE BROKEN HILL PROPRIETARY CO. has received a cable from Melbourne which states that, as foreshadowed by the chairman on the occasion of the annual meeting, the board regret that the absence of any indication of substantial recovery in the market price of lead will necessitate the suspension of productive operations on Broken Hill on September 24.

THE FOURTH CONFERENCE of the Association of Special Libraries and Information Bureaux (formed to facilitate the co-ordination and systematic use of sources of information in science, industry, commerce, public affairs, etc.) will be held at Trinity College, Cambridge, on September 23, and will last two days. Sir Richard Gregory will be one of the sessional chairmen.

RECENT WILLS INCLUDE:—Mr. J. I. Godlee, of Wakes Colne Place, Essex, deputy governor of the Gas Light and Coke Co., £22,579 (net personality £18,300).—Dr. Richard Pearce, of Phillimore Gardens, W., £178,245 (net personality £177,326).—Mr. T. W. S. Hutchins, of Hartford, Cheshire, managing director of Electro-Bleach and By-Products, Ltd., £38,477 (net personality £36,375).

THE INTERNATIONAL CONGRESS FOR TESTING MATERIALS opened at Amsterdam on Monday, Mr. Davis, managing director of the Associated Portland Cement Manufacturing Co., and Mr. Loudenbeck, chief chemist of the Westinghouse Brake and Saxby Co., being members of the British delegation. Representatives of the British Non-Ferrous Metals Research Association and other associations also sent representatives.

MOLER PRODUCTS, LTD., opened a large new works at Hythe, Colchester, on Thursday, September 8. The capacity of the works will quintuple the output of the "Fosalsil" (Mo'er) insulating bricks, partition blocks, and slabs and cement. The works are situated on a 30-acre site between the tidal river Colne and the L.N.E. Railway. The sole selling agents are J. H. Sankey and Sons, Ltd., of Essex Wharf, Canning Town, London, E.16.

THE ROYAL TECHNICAL COLLEGE, GLASGOW, has issued its Calendar for the session 1927-28. In the department of chemistry and technical chemistry (under Professors T. Gray, F. J. Wilson, and R. M. Caven) there are day courses in pure chemistry; technical chemistry; fuels and their applications; dyes and their applications; sugar manufacture; oils and fats; coal tar and its products, etc. In the evening there are similar courses, as well as courses on dyeing, bleaching, and printing; oils, paints and varnishes; gas manufacture; gas distribution and lighting. Other courses of interest are those given in the department of metallurgy. The College is affiliated to the University of Glasgow. Candidates for the degree of B.Sc. in applied science may attend the necessary qualifying courses either in the University, or in the College, or in both. A Diploma and an Associateship of the College are also obtainable.

THE NON-FERROUS METAL TRADES forms one of the subjects of Preliminary Report No. 22 of the Census of Production, 1924, published in the *Board of Trade Journal* for September 15.

AN APPLICATION HAS BEEN FILED with the U.S. Customs Bureau, Treasury Department, alleging the dumping of phosphate on the American market from Morocco, and an investigation will be made.

MEMBERS OF THE EMPIRE MINING CONGRESS arrived at Fernie, British Columbia, on September 9, and inspected the local collieries, coke ovens, and hydro-electric plants. They also saw various industrial plants.

THE MAKING OF CEMENT on a large scale is to be started in the Hope Valley, in the Peak district, by Earle's, of Hull. It is stated that buildings and plant will cost £400,000, and the firm will pay £30,000 a year in wages.

WELSH TINPLATE MANUFACTURERS are to abandon the pool which was set up in the hope of restricting output and enhancing values. The scheme was based upon contributory lines, firms producing over a fixed percentage paying in and those producing under the limit drawing out.

ONE MILLION POUNDS is to be spent in establishing an artificial silk factory at Melbourne or Sydney, which will absorb 1,000 workers. Production will be undertaken by the British Celanese Co., and it is understood that the company's experts are leaving for Australia at an early date.

THE REPORT OF THE Rothamsted Experimental Station for 1925-26 was issued on Wednesday. It is pointed out that nitrogenous manures increase crop yields in almost every season and are the steadiest of all in their action. Phosphates and potassic fertilisers are much less regular in action, and superphosphates are regarded as a safe investment for root crops.

FIFTY MEMBERS OF THE COKE OVEN MANAGERS ASSOCIATION returned to London on Tuesday after a ten days' tour in Germany, Holland, Belgium, and France, where they studied the latest methods of coke manufacture and by-product recovery on the Continent. The party was accompanied by Mr. F. S. Sinnatt, assistant director of the Government Fuel Research Department.

THE MANAGEMENT OF THE DEVONSHIRE BARYTA CO., LTD., miners and manufacturers of barium sulphate, which has carried on business for over half a century at Bridford and Exeter, has passed into the hands of the Malehurst Barytes Co., Ltd., Minsterley, Salop. The managing director, Mr. M. J. Dunsford, who has been connected with the company for more than 40 years, has retired, and is succeeded by Lieut.-Col. Ramsden, C.M.G., D.S.O.

SEVERAL WELL-KNOWN CHEMICAL FIRMS had stands at the Bakers, Confectioners and Allied Trades' Exhibition at the Agricultural Hall this week. Oleo resins, preservatives, and harmless colours were among the products on the stand of A. Boake, Roberts and Co., while the Manchester Chemical Co., W. and J. Bush, and Stephens and Howell showed various brands of essences and essential oils for flavouring, as well as colours for colouring confectionery and cakes.

SUGAR BEET NEWS.—A resolution strongly disapproving the agreement entered into fixing the price of sugar beet at 4d. per ton was passed at a meeting of the West Riding branch of the National Farmers' Union on September 9. Mr. J. A. Fox, of Doncaster, said that such a price meant the death knell of the sugar beet industry in this country.—The East Riding Executive Committee of the Farmers' Union have been informed that if a sugar beet factory is to be established at Hull, considerable financial support will be required. It was suggested that the larger factories were too heavily capitalised, and that it would encourage the industry if smaller factories were erected in suitable localities.

### Obituary

SIR W. S. GLYN-JONES, from 1918 to 1926 secretary of the Pharmaceutical Society of Great Britain, at Vancouver, on September 9, aged 58. He was M.P. for the Stepney division of Tower Hamlets from 1910 to 1918. His book on "The Law of Poisons and Pharmacy" is a standard work of reference.

PROFESSOR ROBERT ALFRED LEHFELDT, at Johannesburg, on September 12, aged 59. Professor Lehfeldt was demonstrator in physics at Firth College (now the University of Sheffield) in the period 1890-96, and professor of physics at East London College, 1896-1906. Since 1917 he had been professor of economics at the University of Witwatersrand, Johannesburg. He was the author of several books, including one on el'crochemistry.

MR. ROBERT FISH, retired gas engineer, who for more than half a century had been a member of the Institute of Gas Engineers, at East Cowes, on September 10, aged 90. After being engineer and manager of the Hornsey Gas Co., Middlesex for ten years, he had charge of the municipal lighting of Bucharest, and for his services in maintaining public lighting in exceptional difficulties during the Russo-Turkish War he was decorated with the Order of the Knight of Star of Roumania. He was manager of East Cowes gasworks for about thirty years, and took an active part in public affairs.

## References to Current Literature

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**INORGANIC.**—The decomposition of nitrous acid in aqueous solution. T. W. J. Taylor, E. W. Wignall, and J. F. Cowley. *J. Chem. Soc.*, August, pp. 1,923-1,929.

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**ORGANIC.**—The synthesis of glucosides. I. The synthesis of indican. A. Robertson. *J. Chem. Soc.*, August, pp. 1,937-1,943.

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**ANALYSIS.**—Determination of isopropyl alcohol in presence of acetone and of methylethylketone in presence of secondary butyl alcohol. H. A. Cassar. *Ind. Eng. Chem.*, September 1, pp. 1,061-1,062.

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Sensitivities of detonating compounds to frictional impact, impact, and heat. C. A. Taylor and W. H. Rinkenbach. *J. Franklin Inst.*, September, pp. 369-376.

**ORGANIC.**—Selective reduction of furfuracrolein by means of platinum oxide—platinum black and hydrogen. XVI. R. A. Bray with R. Adams. *J. Amer. Chem. Soc.*, August, pp. 2,101-2,106.

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The dissociation into free radicals of substituted dixanthyls. IV. Dixanthyl and dixanthyl- $\alpha$ : $\alpha$ -dicarboxylic acid. J. B. Conant and B. S. Garvey, Jr. *J. Amer. Chem. Soc.*, August, pp. 2,080-2,088.

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**PAINTS.**—A principle for testing the durability of paints as protective coatings for wood. F. L. Browne. *Ind. Eng. Chem.*, September 1, pp. 982-985.

**PLANT.**—A critical analysis of equations for the design of fractionating columns. L. H. Shirk and R. E. Montonna. *Ind. Eng. Chem.*, August 1, pp. 907-911.

**SEWAGE.**—Decomposition of cellulose in fresh sewage solids. H. Heukelekian. *Ind. Eng. Chem.*, August 1, pp. 928-930.

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Experiments in wood preservation. II. Arsenites of copper and zinc. L. P. Curtin. *Ind. Eng. Chem.*, September 1, pp. 993-999.

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Contribution to the electrolytic determination of alkali. P. Drossbach. *Z. anorg. u. allg. Chem.*, August 19, pp. 149-156.

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On complex compounds of nitric oxide and the so-called univalent iron. H. Reihlen and A. von Friedolsheim. *Annalen*, August 12, pp. 71-82.

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### Miscellaneous

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**ELECTROCHEMISTRY.**—The behaviour of various metals in the electrolysis of water by the alternating current. A. P. Rollet. *Comptes Rendus*, August 22, pp. 457-460 (in French).

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Kinetics of the oxidation of hydroiodic acid by free oxygen in the dark and under the action of light. A. Berthoud and G. Nicolet. *Helv. Chim. Acta*, July, Vol. 10 (4), pp. 475-486 (in French).

**SOLVENTS.**—Solvents and plasticisers in use in nitrocellulose paints and varnishes. Parts VII and VIII. J. H. Frydlander. *Rev. Prod. Chim.*, July 15, pp. 482-483, July 31, pp. 521-530 (in French).

## Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

## **Abstracts of Complete Specifications**

- 275,373. DYEING CELLULOSE ESTERS AND ETHERS. British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, R. S. Horsfall, L. G. Lawrie, and J. Hill, Crumplands Vale Chemical Works, Blackley, Manchester. Application date, June 11, 1926.

The dyeing of these materials is effected by means of the azo dyes made by coupling diazotised sulphonarylides of aromatic amine compounds with aromatic bases of the benzene or naphthalene series. Yellow, orange, and red shades are obtained. The dyestuffs from *m*-aminobenzenesulphoanilide and  $\alpha$ -naphthylamine, from *m*-aminobenzenesulpho-*m*-nitroanilide and cresidine, and from *1*-naphthylamine-5-sulphoanilide and cresidine or dimethylaniline, are described.

- 275,377. METHYLATION OF AMMONIA AND ORGANIC AMINES.  
A. Mackert, Marktplatz, Tauberbischofsheim, Germany.  
Application date, June 17, 1926.

Amines and ammonia can be methylated, as is known, by passing them together with methyl alcohol vapour, over dehydration catalysts such as oxide of aluminium, thorium, zirconium, and titanium; owing, however, to the formation of water, which tends to reverse the action, it is necessary to employ an excess of alcohol to methylate completely the amine, and this excess is very liable to decomposition. It is now found that these disadvantages can be obviated by employing instead of methyl alcohol dimethylether, which is stable at high temperatures and can be employed in excess, the latter being used over again. A mixture of the theoretical quantity of methyl alcohol and an excess of dimethyl ether can also be used, the latter remaining unchanged and being available for further use. Examples are given of the production of a mixture of mono-, di-, and tri-methylamine from ammonia, and of almost pure dimethyl-aniline and dimethyl- $\beta$ -naphthylamine from aniline and  $\beta$ -naphthylamine respectively.

- 275,421. ANTHRAQUINONE DYES. British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, and W. W. Tatton, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, August 19, 1926.

In Specification 268,542 (see THE CHEMICAL AGE, Vol. XVI, p. 448) is described the production of sulphonic acids which are wool dyes by treating 1-hydroxy-2-halogen-4-arylamino-anthraquinones with sulphites. Disulphonic acids which are more soluble and dye in greener shades are now obtained by applying the same processes to 1-hydroxy-2-halogen-4-sulpho-arylaminoanthraquinones. According to an example 1-hydroxy-2-chlor-4-(sulpho-*p*-toluidio)-anthraquinone (obtained by sulphonating the parent compound) is boiled with sodium sulphite and the product isolated by evaporation.

- 275,724. INTERMEDIATES AND AZINE DYES. W. Carpmael,  
24, Southampton Buildings, London. From I. G. Far-  
benindustrie Akt.-Ges., Frankfort-on-Main, Germany.  
Application date, May 12, 1926.

**I** : 3-Di-(*4*-alkyloxyphenylamino)-naphthalenes are made by heating a 1-amino-3-sulphonaphthalene with a *p*-alkyloxy-aniline. These compounds can be converted either by condensing with aromatic nitroso compounds or by simultaneous oxidation together with *p*-phenylene-diamines, into azine dyes which are faster to light than the dyestuffs from the corresponding 1 : 3-diphenylamino- or 1 : 3-ditolylamino-naphthalenes. Examples are given of the preparation of 1 : 3-di (*4*-methoxyphenylamino)-naphthalene-6-sulphonic and 6 : 8-disulphonic acids by heating 1-naphthylamine-3 : 6-disulphonic and 3 : 6 : 8-trisulphonic acids respectively with *p*-anisidine and *p*-anisidine hydrochloride; the products are then condensed with *p*-nitrosodimethylaniline or oxidised (by means of air in presence of ammoniacal copper oxide) together with 4-aminodimethylaniline-3-sulphonic acid in order to obtain greenish-blue acid dyestuffs for wool.

- 275.459. SOLID AMMONIUM CARBONATE. Rhenania-Kunheim Verein Chemische Fabriken Akt.-Ges. (formerly known as Rhenania Verein Chemische Fabriken Akt.-Ges.), 10, Reichstagsufer, Berlin N.W.7, Germany. Application date, November 20, 1926. Patent of addition to 262,408.

The parent Specification (see THE CHEMICAL AGE, Vol. XVI, p. 167) describes the preparation of solid ammonium carbonate in one operation by introducing gaseous ammonia and carbon dioxide into a reaction chamber the walls of which are continuously or intermittently covered with a layer of aqueous liquid. It is now found that by working at temperatures below 60° C. and preferably at 35-40° C. the quality of the incrustations, particularly the hardness, is improved. If the reaction is effected under pressure the temperature may be as high as 90° C. Examples are given of the production of solid ammonium carbonate in a cylindrical tower at ordinary pressure and a temperature of 40° C. and also in an autoclave at 70-80° C. and 40-50 atmospheres pressure.

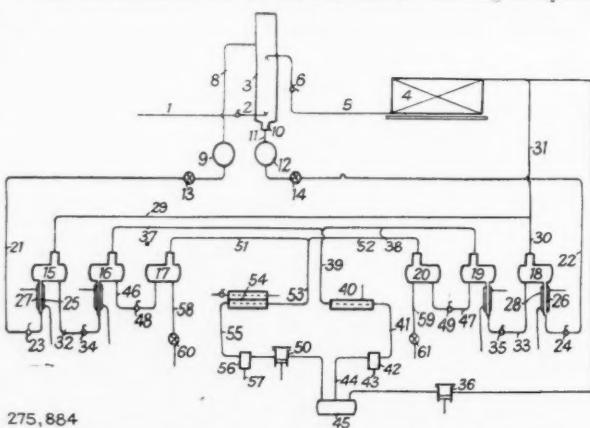
- 275,725. SYNTHETIC RESINS. L. Light, 316, Bury New Road, Higher Broughton, Manchester. Application date, May 12, 1926.

A resinous condensation product is obtained by heating aniline with formaldehyde and an acid in the proportion of 50 grams of aniline, 5 grams of glacial acetic acid or 0.2 grams of concentrated hydrochloric acid, and 40 cc. of 40 per cent. formaldehyde solution, to a temperature of 70-90° C., the final temperature being maintained for a few minutes only. If the product is heated for 30 minutes at 90° C. its softening point is raised from 25° C. to 35° C. and by heating at 190-200° C., the softening point is further raised to 75° C. The glassy products are rendered opaque by boiling with water.

- 275.843. ARTIFICIAL MANURE. F. G. Liljenroth, Eriksbergsgatan 14, Stockholm, Sweden.

A soluble nitrogenous-phosphate manure is produced by treating mineral phosphate with sulphuric acid, filtering off the calcium sulphate from the phosphoric acid, and converting the calcium sulphate into ammonium sulphate by treatment with carbon dioxide and ammonia. The ammonium sulphate is then evaporated to dryness together with the phosphoric acid solution which has meanwhile been neutralised with ammonia.

- 275,884. REFINING HYDROCARBONS. O. Y. Imray, 30, Southampton Buildings, London. From Allgemeine Gesellschaft für Chemische Industrie m.b.H., 33, Unter den Linden, Berlin. Application date, March 2, 1927.



- 275,884

carbons by means of liquid sulphur dioxide and the recovery of the sulphur dioxide and extracted substances, and is a further development of the process of Specification 114,845  
*(Continued on page 261)*

(Continued from page 260)

(see THE CHEMICAL AGE, Vol. II, p. 21). The oil passes from the pipe 1, upwards through the mixer 3 in which it is treated with a descending stream of liquid sulphur dioxide from the tank 4 by the pipe 5. The oil containing some sulphur dioxide passes away by the pipe 8 through the tank 9 and pump 13 to a series of evaporators 15, 16, 17; the sulphur dioxide extract passes similarly to a second series of evaporators 18, 19, 20. The first two of each series are heated by a steam jacket round lower extensions 25, 26 through which the entering liquids pass. Evaporators 15 and 18 discharge the sulphur dioxide directly into the tank 4 under the requisite pressure, whereas the remainder work under lower pressure, particularly 17 and 20, which work under vacuum and are not fitted with heating means. The sulphur dioxide from the intermediate pressure evaporators is freed from suspended oil in the separator 42 and returned to the tank 4 by the pump 36; that from the low pressure stage is similarly pumped into the intermediate stage by the pump 50. The refined oil and the extracted substances are withdrawn at 60 and 61 respectively.

**NOTE.**—Abstracts of the following specifications, which are now accepted, appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention:—249,155 (I.G. Farbenindustrie Akt.-Ges.), relating to the production of liquid hydrocarbons from coal, see Vol. XIV, p. 527; 251,996 and 260,940 (I.G. Farbenindustrie Akt.-Ges.), relating to the manufacture of vat dyestuffs, see Vol. XV, p. 88, and Vol. XVI, p. 69; 252,162 (E. G. T. Gustafsson), relating to the production of metals in electric furnaces, see Vol. XV, p. 15 (metallurgical section); 252,182 (I.G. Farbenindustrie Akt.-Ges.), relating to the manufacture of azo dyestuffs, see Vol. XV, p. 117; 252,361 (G. Patart), relating to the regeneration of contact masses for catalytic hydrogenation of carbon monoxide, see Vol. XV, p. 141; 253,911 (I.G. Farbenindustrie Akt.-Ges.), relating to cyclic hydrocarbons and derivatives thereof, see Vol. XV, p. 233; 254,747 (Deutsche Gold und Silber Scheideanstalt vorm. Roessler), relating to a method of stabilising hydrocyanic acid, see Vol. XV, p. 279; 261,764 (I.G. Farbenindustrie Akt.-Ges.), relating to the manufacture of cyclohexylamines, see Vol. XVI, p. 143; 263,197 (C. Abderhalden), relating to the low temperature carbonisation of hydrocarbonaceous material, see Vol. XVI, p. 218; 265,190 (J. J. Tardan), relating to a process for the manufacture of lead monoxide by a wet method, see Vol. XVI, p. 362; 265,545 (Newport Co.), relating to preparation of nitro-amino-benzoyl-o-benzoic acid and its derivatives, see Vol. XVI, p. 381; 265,563 (Metallbank und Metallurgische Ges.), relating to a process of purifying aluminium and its alloys, see Vol. XVI, p. 47 (metallurgical section).

#### International Specifications not yet Accepted

274,072. TITANIUM OXIDE PIGMENTS. G. Carteret, 68, Rue Escudier, Boulogne-sur-Seine, France. International Convention date, July 12, 1926.

These are produced by precipitating titanium oxide on to powdered bases such as silica or aluminium silicates so that the particles of base are coated with the white titanium oxide. The precipitation is effected by boiling the base with a hydrochloric acid solution of titanium oxide to which some sulphuric acid has been added. The pigments are finally washed, neutralised, and calcined at red heat.

274,076. CONCENTRATED ACETIC ACID. Holzverkhlungs-Industrie Akt.-Ges., Constance, Baden, Germany. International Convention date, July 6, 1926.

Aqueous acetic acid is esterified in the usual way, for example, with ethyl alcohol, and the resultant acetic ester in vapour form subjected to a high temperature (500–700° C.) whereby acetic acid and an unsaturated hydrocarbon are produced; the presence of iron and iron oxide is to be avoided. For the decomposition catalysts may be employed, for example, copper, silver, copper or silver phosphates, and phosphates of alkali or di- or tri-valent metals. Under some conditions, particularly when phosphates are used, acetic anhydride may be formed. Examples are given according to which there are produced acetic acid and ethylene by passing ethyl acetate over heated silver and a mixture of acetic acid and acetic anhydride together with ethylene when silver phosphate is used as catalyst and the speed of the vapour is low.

274,094. DYEING CELLULOSE ACETATE. Durand et Huguenin Soc. Anon., Basle, Switzerland. International Convention date, July 10, 1926.

The cellulose acetate or a material containing it is treated, by dyeing or printing, with an ester salt of a leuco-vat-dye, steamed, and the colour developed at a high temperature with an oxidising agent such as sulphuric acid and sodium nitrite or dichromate. The steaming fixes the ester on the cellulose acetate. If a mixed fabric containing cotton is so treated solid shades are produced, but if the fabric is washed before development the ester is removed from the cotton which remains white subsequently; on the other hand, if the steaming is omitted and the development effected at low temperature the cotton only is dyed, the cellulose acetate having but little affinity under these conditions. Examples are given according to which there are used ester salts of leuco-tetrabromindigo, leuco-4 : 4'-dimethyl-6 : 6'-dichlorothiindigo, and leuco-dimethoxydibenzanthrone.

274,095. CYCLIC KETONES. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, July 8, 1926. Addition to 273,321.

Hydrocarbons or their derivatives having a free peri position are condensed with dicarboxylic anhydrides derived from maleic anhydride by addition of hydrogen, chlorine, bromine, etc., at the double bond instead of with maleic anhydride itself as in the parent Specification (see THE CHEMICAL AGE, Vol. XVII, p. 221). Open chain ketonecarboxylic acids may be first produced, the final products being cyclic ketone carboxylic acids. Examples are given of the condensation of acenaphthene with succinic anhydride in presence of sodium-aluminium chloride. The acenaphthene may be replaced by naphthalene, 1-methyl- or 1-chlor-naphthalene, or anthracene.

274,099. OXIDISING AMMONIA. N. Caro, 8, Budapeststrasse, and A. R. Frank, 138, Kurfürstendamm, Halensee, both in Berlin. International Convention date, July 8, 1926.

The catalytic oxidation of ammonia with air or oxygen is carried out with an addition of free hydrogen to the gas mixture. The process is preferably carried out as described in Specification 273,718 (see THE CHEMICAL AGE, Vol. XVII, p. 242).

274,103. NAPHTHALENE-I : 4 : 5 : 8-TETRACARBOXYLIC ACID. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, July 9, 1926.

This is prepared by oxidising the cyclic ketonic compounds obtained from acenaphthene and addition products of maleic anhydride by the process described in Specification 274,095, an abstract of which appears above. The oxidation may be effected in acid or alkaline solution, for example, with dichromate or permanganate.

274,104. SULPHONATED FATS, OILS, ETC. H. T. Boehme Akt.-Ges., 29, Maritzstrasse, and H. Bertsch, 5, Wittelsbachstrasse, Chemnitz, Germany. International Convention date, July 8, 1926.

The polymerisation products of fats, oils, and fatty acids are sulphonated in the presence of organic acids or their anhydrides or chlorides. The sulphonation of Floricin, a product obtained by heating castor oil with sulphuric acid in presence of glacial acetic acid, is described.

274,128. AZO DYES AND DYEING. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, July 9, 1926.

2 : 3-Oxynaphthoic arylamides are coupled with diazotised 1 : 3-dimethyl-4-amino-6-halogen-or-2 : 6-dihalogen-benzenes either in substance or on the fibre. Yellow to red shades, fast to light, chlorine, and kierboiling can thus be produced on cotton. The arylamides mentioned are the  $\alpha$ - and  $\beta$ -naphthalides, the 4-chlor-2-toluidide, and the 5-chlor-2-toluidide; as diazo components are specified the 6-chlor-, 6-brom-, and 2 : 6-dichlor-derivatives of the 1 : 3-dimethyl-4-aminobenzene.

274,130. AZO DYES. Soc. of Chemical Industry in Basle, Basle, Switzerland. International Convention date, July 10, 1926.

These are of the general formula  

$$R_1 - N = N - R_2 - NH - X - NH - R_3$$
where  $R_1$  is an  $\alpha$ -naphthol residue coupled in the peri-position

through an azo group to the residue  $R_2$  of an amine coupling in the  $\beta$ -position to the amino-group,  $R_3$  is any aromatic complex containing at least one azo group, and  $X$  is -CO- or -CS-. They are produced by the action of phosgene or a substitute therefor, or thiophosgene or carbon disulphide, upon two molecular proportions of aromatic amino compounds, of which at least one consists of an aminoazo dye made by coupling a diazotised 1 : 8-aminonaphthol (or an O-acidyl derivative thereof) with a primary amine of the benzene or naphthalene series. The products dye vegetable fibres directly in various shades of orange, red, and blue which are fast to light and easily discharged. The dyeings may be after-treated with metallic salts or the dyestuffs may themselves be converted into metal compounds. According to one example an equimolecular mixture of the monoazo dye from diazotised H-acid and cresidine and the saponified monoazo dye from diazotised monoacetyl- $p$ -phenylenediamine sulphonic acid and 2 : 8 : 6-acid is treated with phosgene. A large number of other examples are given.

#### LATEST NOTIFICATIONS.

- 276,907. Process for the production of base-exchanging substances. Rosenheim, Dr. A. September 1, 1926.
- 276,968. Age-resisting rubber compositions and methods of preparing same. Du Pont de Nemours and Co., E. I. August 31, 1926.
- 276,972. Process for the denitrification of waste acid mixtures. Busching, W. September 3, 1926.
- 277,003. Use of medicaments insoluble or sparingly soluble in water. Soc. of Chemical Industry in Basle. September 1, 1926.
- 277,034. Manufacture of coloured rubber goods. I. G. Farbenindustrie Akt.-Ges. September 4, 1926.

#### Specifications Accepted with Date of Application

- 256,272. Azo dyestuffs, Manufacture of. I. G. Farbenindustrie Akt.-Ges. August 1, 1925.
- 259,930. Oxidising organic compounds, Process for. Silesia Verein Chemische Fabriken. October 19, 1925.
- 262,097. Nitration process. M. Battegay. November 24, 1925.
- 263,082. Obtaining light hydrocarbons from hydroxylated, carboxylated, and like oxygenated organic compounds, Process for. J. F. D. Florentin, A. Kling, and C. Matignon. December 17, 1925.
- 269,155. Substituted aromatic sulphonic acids, Manufacture of. I. G. Farbenindustrie Akt.-Ges. April 7, 1926. Addition to 253,118.
- 269,174. Dissolving aluminiferous materials, Method of. R. Jacobsson. April 6, 1926.
- 270,729. Derivatives of aminometal-mercapto-sulphonic acids, Manufacture of. Chemische Fabrik auf Actien (vorm. E. Schering). May 5, 1926.
- 276,427. Purification of hydrocarbons obtained by cracking processes, Process for. W. Carpmael (I.G. Farbenindustrie Akt.-Ges.). May 26, 1926.
- 276,435. Vulcanisation accelerators and products obtained therefrom, Process for manufacturing. E. C. R. Marks (E. I. Du Pont De Nemours and Co.). May 28, 1926.
- 276,438. Cement, Manufacture of. British Portland Cement Manufacturers, Ltd., J. H. Baxter, M. K. Bamber, and W. J. Dickinson. May 28, 1926.
- 276,450. Dyeing artificial silk, Process for. British Dyestuffs Corporation, Ltd., J. Baddiley, P. Chorley, and C. Butler. June 4, 1926.
- 276,518. Artificial resins, Manufacture and production of. J. Y. Johnson (I.G. Farbenindustrie Akt.-Ges.). October 4, 1926.
- 276,522. Low temperature distillation of carbonaceous material. Synthetic Ammonia and Nitrates, Ltd., R. E. Slade, and C. F. R. Harrison. October 13, 1926.
- 276,532. Cracking of mineral oil and other hydrocarbon material. J. F. P. De La Riboisiere. November 12, 1926.
- 276,571. Aromatic tetrahydronaphthylamines or derivatives thereof, Manufacture of. O. Y. Imray (Soc. of Chemical Industry in Basle). February 24, 1927.

#### Applications for Patents

- Allgemeine Ges. für Chemische Industrie. Manufacture of petroleum hydrocarbons. 23,770. September 9.
- Arnold, C., and Standard Development Co. Distilling hydrocarbons. 23,624. September 8.
- Bleachers' Association, Ltd. Treatment of textile materials. 23,495, 23,496. September 7.
- British Rotary Filter Co., Ltd. Filters. 23,598. September 8.
- Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Process for introducing sulphi-cyanide groups into organic compounds. 23,308. September 5.
- Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of aqueous solutions of carbon disulphide. 23,454. September 6.

- Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of acetic anhydride. 23,456. September 6.
- Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Dyeing artificial silk. 23,458. September 6.
- Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of alkali cyanides. 23,459. September 6.
- Carpmael, A. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of basic oxime ethers, etc. 23,787. September 9.
- Carpmael, K. (I. G. Farbenindustrie Akt.-Ges.). Manufacture of artificial silk. 23,457. September 6.
- Carpmael, K. (I. G. Farbenindustrie Akt.-Ges.), and Carpmael, K. S. Manufacture of new quaternary ammonium compounds. 23,549. September 7. (December 10, 1926.)
- Coley, H. E. Reduction of ores. 23,229, 23,230. September 5.
- Coley, H. E. Extraction of oil from shale. 23,517. September 7.
- Coley, H. E. Manufacture of zinc. 23,811. September 10.
- Coley, H. E. Manufacture of tin. 23,812. September 10.
- Dittmann, K. E., Faerber, K., and Gelsenkirchener Bergwerks-Akt.-Ges. Production of manganese peroxide, etc. 23,881. September 10.
- Goodyear Tire and Rubber Co. Method of preparing dithiazyl disulphide. 23,440. September 6. (United States, September 7, 1929.)
- Henshilwood, A. B. Devices for guiding, etc., fabrics during dyeing, etc. 23,719. September 9.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Metallic ores for electromagnets, etc. 23,252. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of vat dyestuffs. 23,253. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of lacquer coatings. 23,254. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of nickel and cobalt carbonyl. 23,255. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Recovery of oils of high boiling point. 23,256. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Purification of gases. 23,257. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of valuable products from montan wax. 23,258. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Drying, carbonisation, etc., of coals. 23,259. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of metal carbonyls. 23,260. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of acetyl-cellulose. 23,304. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Process for introducing sulphonyl groups into organic compounds. 23,308. September 5.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of lacquers, films, etc. 23,397. September 6.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Treatment of materials with alkaline liquids. 23,398. September 6.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of dibenzanthrone. 23,399. September 6.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of aqueous solutions of solvents, etc. 23,400. September 6. (March 10, 1926.)
- I. G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of condensation products of the naphthostyryl series. 23,410. September 6.
- I. G. Farbenindustrie Akt.-Ges. Manufacture of aqueous solutions of carbon disulphide. 23,454. September 6.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Bleaching artificial fatty acids. 23,524. September 7.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of dyeings on cellulose esters. 23,626. September 8.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of wetting-agents, etc. 23,626. September 8.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Separation of gaseous hydrocarbons. 23,627. September 8.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of olefines, etc. 23,628. September 8.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of butadiene hydrocarbons. 23,629, 23,630. September 8.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Measuring intensity of radiation of sources of ultra-violet light. 23,631. September 8.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of high-viscosity oils. 23,632. September 8.
- I. G. Farbenindustrie Akt.-Ges. Manufacture of basic oxime ethers, etc. 23,787. September 9.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of aromatic amines. 23,841. September 10.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Washing, dyeing, etc., textiles. 23,842. September 10.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of butadiene hydrocarbons. 23,843. September 10.
- I. G. Farbenindustrie Akt.-Ges. Manufacture of coloured rubber goods. 23,305. September 5. (Germany, September 4, 1926.)

## Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

### General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.  
 ACID BORIC, COMMERCIAL.—Crystal, £34 per ton; powder, £36 per ton.  
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.  
 ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.  
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations: 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.  
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.  
 BISULPHITE OF LIME.—£7 10s. per ton, packages extra, returnable.  
 BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.  
 BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)  
 CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.  
 COPPER SULPHATE.—£25 to £25 10s. per ton.  
 METHYLATED SPIRIT 61 O.P.—Industrial, 2s. 5d. to 2s. 10d. per gall.; pyridinised industrial, 2s. 7d. to 3s. per gall.; mineralised, 3s. 6d. to 3s. 10d. per gall.; 64 O.P., 1d. extra in all cases; prices according to quantity.  
 NICKEL SULPHATE.—£38 per ton d/d.  
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.  
 POTASH CAUSTIC.—£30 to £33 per ton.  
 POTASSIUM BICHROMATE.—4s. per lb.  
 POTASSIUM CHLORATE.—3s. per lb., ex wharf, London, in cwt. kegs.  
 SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.  
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.  
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.  
 SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.  
 SODIUM ACETATE 97/98%.—£21 per ton.  
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.  
 SODIUM BICHROMATE.—3s. per lb.  
 SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton for home market, 1-cwt. drums included.  
 SODIUM CHLORATE.—2s. per lb.  
 SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.  
 SODIUM PHOSPHATE.—£14 per ton, f.o.r. London, casks free.  
 SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.  
 SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.  
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.  
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.r. London, 1-cwt. kegs included.

### Coal Tar Products

ACID CARBOLIC CRYSTALS.—8d. to 8s. per lb. Crude 60's, 2s. 6d. to 2s. 7d. per gall.  
 ACID CRESYLIC 99/100.—2s. 9d. to 2s. 10d. per gall. 97/99.—2s. 4d. to 2s. 5d. per gall. Pale, 95%, 2s. 2d. to 2s. 3d. per gall. Dark, 99%, 1s. 9d. to 1s. 10d. per gall.; 95%, 2s. 1d. to 2s. 2d.  
 ANTHRACENE.—A quality, 2s. per unit. 40%. £5 per ton.  
 ANTHRACENE OIL, STRAINED.—8d. to 8s. per gall. Unstrained, 7d. to 8d. per gall.  
 BENZOLE.—Crude 65's, 9d. to 9s. per gall., ex works in tank wagons. Standard Motor, 1s. 1d. to 1s. 2d. per gall., ex works in tank wagons. Pure, 1s. 5d. to 1s. 6d. per gall., ex works in tank wagons.  
 TOLUOLE.—90%, 1s. 4d. to 1s. 5d. per gall. Firm. Pure, 1s. 6d. to 1s. 7d. per gall.  
 XYLOL.—1s. 3d. to 1s. 4d. per gall. Pure, 2s. 5d. per gall.  
 CREOSOTE.—Cresylic, 20/24%, 10d. to 1s. per gall.; middle oil, 8d. per gall. Heavy, 9d. per gall. Standard specification, 7d. to 7s. ex works. Salty, 7d. per gall. less 1s.  
 NAPHTHA.—Crude, 9d. to 10d. per gall. Solvent 90/160, 8s. per gall. Solvent 95/160, 1s. 4d. to 1s. 5d. per gall. Solvent 90/190, 8s. per gall. to 9d. per gall.  
 NAPHTHALENE CRUDE.—Drained Creosote Salts, £5 per ton. Whizzed or hot pressed, £8 per ton.  
 NAPHTHALENE.—Crystals, £11 10s. to £12 per ton. Quiet. Flaked, £12 10s. to £13 per ton, according to districts.  
 PITCH.—Medium soft, 88s. 9d. to 91s. 3d. per ton, f.o.b., according to district. Market firm.  
 PYRIDINE.—90/140, 5s. 9d. to 6s. per gall. 90/180, 4s. 6d. to 5s. per gall. Heavy, 4s. to 4s. 6d. per gall.

### Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:  
 ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.  
 ACID ANTHRANILIC.—6s. per lb. 100%.  
 ACID BENZOIC.—1s. 9d. per lb.  
 ACID GAMMA.—4s. 9d. per lb.  
 ACID H.—3s. per lb. 100% basis d/d.  
 ACID NAPHTHONIC.—1s. 6d. per lb.  
 ACID NEVILLE AND WINTHROP.—4s. 9d. per lb.  
 ACID SULPHANILIC.—9d. per lb. 100% basis d/d.  
 ANILINE OIL.—7d. per lb. naked at works.  
 ANILINE SALTS.—7s. d. per lb. naked at works.  
 BENZALDEHYDE.—2s. 3d. per lb.  
 BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.  
 BENZOIC ACID.—1s. 8d. per lb.  
 o-CRESOL 29/31° C.—5s. per lb.  
 m-CRESOL 98/100%.—2s. 7d. per lb. Only limited inquiry.  
 p-CRESOL 32/34° C.—2s. 8d. per lb. Only limited inquiry.  
 DICHLORANILINE.—2s. 3d. per lb.  
 DIMETHYLANILINE.—1s. 1d. per lb.  
 DINITROBENZENE.—9d. per lb. naked at works. £75 per ton.  
 DINITROCHLOROBENZENE.—£84 per ton d/d.  
 DINITROTOLUENE.—4s. 5d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.  
 DIPHENYLAMINE.—2s. 10d. per lb. d/d.  
 a-NAPHTHOL.—2s. per lb. d/d.  
 B-NAPHTHOL.—1s. 1d. to 1s. per lb. d/d.  
 a-NAPHTHYLAMINE.—1s. 3d. per lb. d/d.  
 B-NAPHTHYLAMINE.—3s. per lb. d/d.  
 o-NITRANILINE.—5s. 9d. per lb.  
 m-NITRANILINE.—3s. per lb. d/d.  
 p-NITRANILINE.—1s. 8d. per lb.  
 NITROBENZENE.—6d. per lb. naked at works.  
 NITRONAPHTHALENE.—1s. 3d. per lb. d/d.  
 R. SALT.—2s. 2d. per lb. 100% basis d/d.  
 SODIUM NAPHTHIONATE.—1s. 8d. per lb. 100% basis d/d.  
 o-TOLUIDINE.—7s. d. per lb. naked at works.  
 p-TOLUIDINE.—2s. 2d. per lb. naked at works.  
 m-XYLIDINE ACETATE.—2s. 1d. per lb. 100%.  
 N. W. Acid.—4s. 9d. per lb. 100%.

### Wood Distillation Products

ACETATE OF LIME.—Brown, £9 to £9 5s. per ton. Good demand, Grey, £14 10s. to £15 per ton. Liquor, 9d. per gall.  
 CHARCOAL.—£6 to £9 per ton, according to grade and locality. Foreign competition severe.  
 IRON LIQUOR.—1s. 3d. per gall. 32° Tw. 1s. per gall. 24° Tw.  
 RED LIQUOR.—9d. to 10d. per gall.  
 WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.  
 WOOD NAPHTHA, MISCELL.—3s. 1d. to 4s. 3d. per gall. Solvent, 4s. 3d. per gall.  
 WOOD TAR.—£4 to £5 per ton.  
 BROWN SUGAR OF LEAD.—£40 15s. per ton.

### Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6s. to 1s. 5d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.  
 ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.  
 BARYTES.—4s. 10s. to £6 15s. per ton, according to quality.  
 CADMIUM SULPHIDE.—2s. 6d. to 2s. 9d. per lb.  
 CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.  
 CARBON BLACK.—5s. per lb., ex wharf.  
 CARBON TETRACHLORIDE.—£45 to £50 per ton, according to quantity, drums extra.  
 CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.  
 DIPHENYLGUANIDINE.—3s. 9d. per lb.  
 INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5s. to 6s. per lb.  
 LAMP BLACK.—£35 per ton, barrels free.  
 LEAD HYPOSULPHITE.—9d. per lb.  
 LITHOPONE, 30%.—£22 10s. per ton.  
 MINERAL RUBBER "RUBFRON."—£13 12s. 6d. per ton, f.o.r. London.  
 SULPHUR.—£9 to £11 per ton, according to quality.  
 SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.  
 SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.  
 THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb. carriage paid.  
 THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.  
 VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.  
 ZINC SULPHIDE.—1s. per lb.

### Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.  
 ACID, ACETYL SALICYLIC.—2s. 3d. to 2s. 5d. per lb.  
 ACID, BENZOIC B.P.—2s. to 3s. 3d. per lb., according to quantity. Solely ex Gum, 1s. to 1s. 3d. per oz., according to quantity.

**ACID, BORIC B.P.**—Crystal, 40s. to 43s. per cwt.; powder, 44s. to 47s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.

**ACID, CAMPHORIC.**—19s. to 21s. per lb.

**ACID, CITRIC.**—Is. 6½d. to Is. 7½d. per lb., less 5%.

**ACID, GALLIC.**—2s. 8d. per lb. for pure crystal, in cwt. lots.

**ACID, PYROGALIC, CRYSTALS.**—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.

**ACID, SALICYLIC, B.P.**—Is. 2½d. to Is. 3½d. per lb.; Technical—1½d. to Is. per lb. Good demand.

**ACID, TANNIC B.P.**—2s. 8d. to 2s. 10d. per lb.

**ACID, TARTARIC.**—Is. 3½d. per lb., less 5%. Firm market.

**AMIDOL.**—9s. per lb., d/d.

**ACETANILIDE.**—Is. 6d. to Is. 8d. per lb. for quantities.

**AMIDOPYRIN.**—8s. 6d. per lb.

**AMMONIUM BENZOATE.**—3s. 3d. to 3s. 6d. per lb., according to quantity.

**AMMONIUM CARBONATE B.P.**—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimated: Is. per lb.

**ATROPINE SULPHATE.**—11s. per oz. for English make.

**BARBITONE.**—6s. per lb.

**BENZONAPHTHOL.**—3s. 3d. per lb. spot.

**BISMUTH CARBONATE.**—9s. 9d. to 10s. per lb.

**BISMUTH CITRATE.**—9s. 6d. to 9s. 9d. per lb.

**BISMUTH SALICYLATE.**—8s. 9d. to 9s. per lb.

**BISMUTH SUBNITRATE.**—7s. 9d. to 8s. per lb.

**BISMUTH NITRATE.**—5s. 9d. to 6s. per lb.

**BISMUTH OXIDE.**—13s. 9d. to 14s. per lb.

**BISMUTH SUBCHLORIDE.**—11s. 9d. to 12s. per lb.

**BISMUTH SUBGALLATE.**—7s. 9d. to 8s. per lb. Extra and reduced prices for smaller and larger quantities respectively; Liquor Bismuthi B.P. in W. Qts. Is. 1d. per lb.; 12 W. Qts. Is. per lb.; 36 W. Qts. 1½d. per lb.

**BORAX B.P.**—Crystal, 24s. to 27s. per cwt.; powder, 26s. to 29s. per cwt. according to quantity. Carriage paid any station in Great Britain, in ton lots.

**BROMIDES.**—Potassium, Is. 9½d. to Is. 10½d. per lb.; sodium, 2s. to 2s. 1d. per lb.; ammonium, 2s. 2d. to 2s. 3d. per lb.; granulated ½d. per lb. less; all spot.

**CALCIUM LACTATE.**—Is. 2½d. to Is. 3½d. per lb.

**CAMPHOR.**—Refined flowers, 2s. 11d. to 3s. 1d. per lb., according to quantity; also special contract prices.

**CHLORAL HYDRATE.**—3s. 6d. per lb., duty paid.

**CHLOROFORM.**—2s. 3d. to 2s. 7½d. per lb., according to quantity.

**CREOSOTE CARBONATE.**—6s. per lb.

**ETHERS.**—Prices for Winchester quarts; dozen Winchester quarts: carboys or drums; and 10 cwt. lots respectively: 730—Is. 2½d.; Is. 2d.; Is. 1½d.; Is. 9½d.; 720 technical—Is. 5½d.; Is. 5d.; Is. 4½d.; Is. 3½d.; 720 pur. (Aether B.P., 1914)—2s. 4d.; 2s. 3½d.; 2s. 3d.; 2s. 2d.

**FORMALDEHYDE.**—£39 per ton, in barrels ex wharf.

**GUAIACOL CARBONATE.**—5s. per lb.

**HEXAMINE.**—2s. 4d. to 2s. 6d. per lb.

**HOMATROPINE HYDROBROMIDE.**—30s. per oz.

**HYDRASTINE HYDROCHLORIDE.**—English make offered at 120s. per oz.

**HYDROGEN PEROXIDE (12 VOL.)**—Is. 4d. per gallon, f.o.r. makers' works, naked. B.P., 10 vols., 2s. 3d. per gal. In carboys. Winchesters, 2s. 11d. to 3s. 9d. per gal.; 20 vols., 4s. 3d. per gal.; Winchesters, 5s. to 6s. 6d. per gal. Special prices for larger quantities.

**HYDROQUINONE.**—2s. 11d. per lb., in cwt. lots.

**HYPOPHOSPHITES.**—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.

**IRON AMMONIUM CITRATE.**—B.P., 2s. 1d. to 2s. 4d. per lb. Green, 2s. 4d. to 2s. 9d. per lb. U.S.P., 2s. 2d. to 2s. 5d. per lb.

**IRON PERCHLORIDE.**—4d. per lb., 22s. per cwt.

**MAGNESIUM CARBONATE.**—Light commercial, £31 per ton net.

**MAGNESIUM OXIDE.**—Light commercial, £6s. 10s. per ton, less 2½%; Heavy Commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.

**MENTHOL.**—A.B.R. recrystallised B.P., 17s. 9d. per lb. net; Synthetic detached crystals, 10s. to 12s. 6d. per lb., according to quantity; Liquid (95%), 11s. 3d. per lb.

**MERCURIALS B.P.**—Up to 1 cwt. lots, Red Oxide, 7s. 5d. to 7s. 7d. per lb., levig., 6s. 11d. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 8d. to 5s. 10d. per lb.; Powder, 5s. 1d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 10d. to 6s. per lb.; Powder, 6s. to 6s. 1d. per lb.; Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s. 3d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 9d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. to 6s. 2d. per lb.; Sulph. nig., 5s. 9d. to 5s. 11d. per lb. Special prices for larger quantities.

**METHYL SALICYLATE.**—Is. 9d. per lb.

**METHYL SULPHONATE.**—9s. 6d. to 9s. 9d. per lb.

**METOL.**—11s. per lb. British make.

**PARAFORMALDEHYDE.**—Is. 9d. per lb. for 100% powder.

**PARALDEHYDE.**—Is. 4d. per lb.

**PHENACETIN.**—2s. 9d. to 3s. per lb.

**PHENAZONE.**—4s. 3d. to 4s. 6d. per lb.

**PHENOLPHTHALEIN.**—6s. to 6s. 3d. per lb.

**POTASSIUM BITARTRATE 99/100% (Cream of Tartar).**—98s. per cwt. less 2½%.

**POTASSIUM CITRATE.**—B.P.C., 1911; Is. 8d. to Is. 11d. per lb.; U.S.P.; Is. 11d. to 2s. 2d. per lb.

**POTASSIUM FERRICYANIDE.**—Is. 9d. per lb., in cwt. lots.

**POTASSIUM IODIDE.**—16s. 8d. to 17s. 2d. per lb. according to quantity.

**POTASSIUM METABISULPHITE.**—6d. per lb., 1-cwt. kegs included, f.o.r. London.

**POTASSIUM PERMANGANATE.**—B.P. crystals, 6d. per lb., spot.

**QUININE SULPHATE.**—2s. per oz., Is. 8d. to Is. 9d. for 1000 oz. lots in 100 oz. tins.

**RESORCIN.**—3s. 9d. to 4s. per lb., spot.

**SACCHARIN.**—55s. per lb.; in quantity lower.

**SALOL.**—2s. 4d. per lb.

**SODIUM BENZOATE, B.P.**—Is. 10d. to 2s. 2d. per lb.

**SODIUM CITRATE, B.P.C.**, 1911.—Is. 8d. to Is. 11d. per lb., B.P.C., 1923.—2s. to 2s. 1d. per lb. for 1-cwt. lots. U.S.P., Is. 11d. to 2s. 2d. per lb., according to quantity.

**SODIUM FERROCYANIDE.**—4d. per lb., carriage paid.

**SODIUM HYPOSULPHITE, PHOTOGRAPHIC.**—£15 5s. per ton, d/d consignee's station in 1-cwt. kegs.

**SODIUM NITROPRUSSIDE.**—16s. per lb.

**SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).**—90s. to 95s. per cwt. Crystals, 5s. per cwt. extra.

**SODIUM SALICYLATE.**—Powder, Is. 8d. to Is. 9½d. per lb. Crystal, Is. 9d. to Is. 10d. per lb.

**SODIUM SULPHIDE, PURE RECRYSTALLISED.**—10d. to Is. 2d. per lb.

**SODIUM SULPHIDE, ANHYDROUS.**—£27 10s. per ton, 5-ton lots.

**SULPHONAL.**—£28 per ton, 2-ton lots.

**TARTAR EMETIC, B.P.**—Crystal or powder, £28 10s. per ton, 1-ton lots.

**THYMOLE.**—Puriss., 10s. to 10s. 3d. per lb., according to quantity. Firmer. Natural, 14s. 3d. per lb.

### Perfumery Chemicals

**ACETOPHENONE.**—6s. 6d. per lb.

**AUBEPINE (EX ANETHOL).**—10s. 6d. per lb.

**AMYL ACETATE.**—2s. per lb.

**AMYL BUTYRATE.**—5s. 3d. per lb.

**AMYL SALICYLATE.**—3s. per lb.

**ANETHOL (M.P. 21/22° C.).**—5s. 6d. per lb.

**BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.**—2s.

**BENZYL ALCOHOL FREE FROM CHLORINE.**—2s. per lb.

**BENZALDEHYDE FREE FROM CHLORINE.**—2s. 6d. per lb.

**BENZYL BENZOATE.**—2s. 6d. per lb.

**CINNAMIC ALDEHYDE NATURAL.**—17s. per lb.

**COUMARIN.**—10s. per lb.

**CITRONELLOL.**—13s. 9d. per lb.

**CITRAL.**—8s. 3d. per lb.

**ETHYL CINNAMATE.**—6s. 6d. per lb.

**ETHYL PHthalate.**—2s. 9d. per lb.

**EUGENOL.**—8s. per lb.

**GERANIOL (PALMAROSA).**—18s. 6d. per lb.

**GERANIOL.**—6s. 6d. to 10s. per lb.

**HELIOTROPINE.**—4s. 9d. per lb.

**Iso Eugenol.**—13s. 6d. per lb.

**LINALOL.**—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb.

**LINALYL ACETATE.**—Ex Bois de Rose, 18s. 6d. per lb. Ex Shui Oil, 14s. 6d. per lb.

**METHYL ANTHRANILATE.**—8s. 6d. per lb.

**METHYL BENZOATE.**—4s. per lb.

**MUSK KETONE.**—35s. per lb.

**MUSK XYLOL.**—8s. per lb.

**NEROLIN.**—4s. 6d. per lb.

**PHENYL ETHYL ACETATE.**—12s. per lb.

**PHENYL ETHYL ALCOHOL.**—10s. 6d. per lb.

**RHODINOL.**—32s. 6d. per lb.

**SAFROL.**—1s. 6d. per lb.

**TERPINEOL.**—Is. 8d. per lb.

**VANILLIN.**—17s. 9d. per lb.

### Essential Oils

**ALMOND OIL.**—11s. per lb.

**ANISE OIL.**—3s. per lb.

**BERGAMOT OIL.**—28s. per lb.

**BOURBON GERANIUM OIL.**—14s. 6d. per lb.

**CAMPHOR OIL.**—75s. per cwt.

**CANANGA OIL, JAVA.**—26s. per lb.

**CINNAMON OIL LEAF.**—6d. per oz.

**CASSIA OIL, 80/85%.**—7s. 6d. per lb.

**CITRONELLA OIL.**—Java, Is. 10d. per lb. Ceylon, pure, Is. 9d. per lb.

**CLOVE OIL.**—5s. 6d. per lb.

**EUCALYPTUS OIL.**—2s. 3d. per lb.

**LAVENDER OIL.**—Mont Blanc, 38/40%, Esters, 19s. 3d. per lb.

**LEMON OIL.**—8s. per lb.

**LEMONGRASS OIL.**—4s. 6d. per lb.

**ORANGE OIL, SWEET.**—11s. 3d. per lb.

**OOTO OF ROSE OIL.**—Anatolian, 30s. per oz. Bulgarian, 75s. per oz.

**PALMA ROSA OIL.**—10s. 6d. per lb.

**PEPPERMINT OIL.**—Wayne County, 16s. 9d. per lb.; Japanese, 8s. 3d. per lb.

**PETITGRAIN OIL.**—7s. 9d. per lb.

**SANDALWOOD OIL.**—Mysore, 26s. 6d. per lb.; 90/95%, 16s. 6d. per lb.

## London Chemical Market

*The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.*

London, September 15, 1927.

TRADE continues along quietly steady lines, with little of particular interest to report. Prices remain steady and mostly unchanged. Export inquiry continues active.

### General Chemicals

**ACETONE.**—Fair day to day business passing at unchanged prices about £62, and reductions for large quantities.

**ACID ACETIC.**—Unchanged at £37 to £38, with fair average demand.

**ACID FORMIC.**—Steady at £47 for 85% technical quality, with an improving demand.

**ACID LACTIC.**—Active demand especially for the pale qualities, with price unchanged at about £42 for 50% weight technical.

**ACID OXALIC.**—In fair demand and price holds firm at about £30 per ton.

**ALUMINA SULPHATE.**—Firm at about £5 10s. for 17/18% quality in large parcels. Inquiry fair.

**AMMONIUM CHLORIDE.**—Demand rather slower than of late and price a little easier.

**ARSENIC.**—Firm with inquiry improving, especially on export account.

**BARIUM CHLORIDE.**—Inclined to be slow of sale with price unchanged at about £8 10s.

**COPPER SULPHATE.**—Active inquiry with quite fair business being done. Price firm at about £24 for best brands.

**EPSOM SALTS.**—In steady request at about £4 10s. to £5.

**FORMALDEHYDE.**—Firm at £40 10s. to £41, with active inquiry.

**LEAD ACETATE.**—Steadier than of late, with forward prices inclined to stiffen. Business quite good. White quality quoted at about £43. Brown about £42.

**LEAD NITRATE.**—Unchanged in price and in fair demand.

**LIME ACETATE.**—Steady and in good request on export account.

**METHYL ACETONE.**—Firm at about £55 to £62, according to quality and quantity, inquiry maintained.

**POTASH CHLORATE.**—Price firm at about £25, with inquiry improving, particularly for export.

**POTASSIUM PERMANGANATE.**—In quiet steady request, price holding firm at about 8d. per lb. for the best bold crystal grade.

**POTASSIUM PRUSSIATE.**—Price firm at about £65 for fair quantities, with slightly higher price for small lots. Inquiry is improving. **SODA ACETATE.**—Firmer, and forward prices inclined to harden. Inquiry is fair. Spot supplies available at about £18 10s.

**SODA BICHROMATE.**—Unchanged.

**SODA CHLORATE.**—Steadier at about £25, with demand fair.

**SODA HYPOSULPHITE.**—In good request at unchanged prices.

**SODA NITRITE.**—Firm at £19 10s. to £20, with demand increasing.

**SODA PHOSPHATE.**—Unchanged at about £12, with good demand and supplies not so heavy.

**SODA PRUSSIATE.**—Maintained at 4½d. to 4½d., with demand fair.

**SODA SULPHIDE.**—Unchanged at about £11 10s., demand slow.

**ZINC SULPHATE.**—Firm at about £13 for best white quality.

### Coal Tar Products

The coal tar product market remains quiet, and there is little change to report in values from last week.

**90's BENZOL.**—Quoted at 1s. 4d. to 1s. 5d. per gallon on rails, while the motor quality is quoted at 1s. 1½d. to 1s. 2½d. per gallon.

**PURE BENZOL.**—Worth about 1s. 7½d. to 1s. 8½d. per gallon, on rails.

**CREOSOTE OIL.**—Firm, the price in the North being 7½d. per gallon, on rails, while the price in London is about 8½d. per gallon.

**CRESYLC ACID.**—Quoted at about 2s. 2d. per gallon, ex works, for the pale quality 97/99%, while the dark quality 95/97% is quoted at about 1s. 11d. per gallon.

**SOLVENT NAPHTHA.**—Remains weak, and can be bought at about 10d. per gallon, on rails.

**HEAVY NAPHTHA.**—Worth about 11d. per gallon, on rails.

**NAPHTHALENES.**—Steady, at about £6 15s. to £7 per ton for the 74/76 quality, and at about £8 to £8 15s. per ton for the 76/78 quality.

**PITCH.**—Remains stationary, chiefly owing to lack of transactions. Values remain firm and unchanged at the nominal figure of 95s., f.o.b.

## Latest Oil Prices

**LONDON.** September 14.—**LINSEED OIL.** Firm and in good request at 7s. 6d. to 10s. advance. Spot, ex mill, £32; September, £31; October-December, £31 10s.; January-April, £32 2s. 6d. **RAPE OIL.** Steady. Crude extracted, £42; technical refined, £44, naked, ex wharf. **COTTON OIL.** Firm. Refined common edible, £42; Egyptian crude, £36; deodorised, £44. **TURPENTINE.** Quiet and 3d. to 6d. lower. American, spot, 39s. 3d., paid and sellers; October-December, 39s. 9d.; January-April, 41s. 9d. per cwt.

**HULL.** September 14.—Closing prices:—**LINSEED OIL.**—Spot to December, £31 15s.; January-April, £32 5s. **COTTON OIL.**—Bombay crude, £34 10s.; Egyptian crude, £35 5s.; edible refined, £39; technical, £38; deodorised, £41. **PALM KERNEL OIL.**—Crushed naked, 5½ per cent., £38 10s. **GROUNDNUT OIL.**—Crushed-extracted, £42; deodorised, £46. **SOYA OIL.**—Extracted and crushed £34; deodorised, £37 10s. **RAPE OIL.**—Crude-extracted, £43; refined, £45 per ton. **COD OIL.**—Spot, 30s. per cwt., net cash terms, ex mill.

## Nitrogen Products

**Export.**—During the last week there has been no change in the sulphate position. British producers continue to sell on the basis of 95s. 6d. per ton f.o.b. U.K. port for prompt shipment, with a higher price for forward. The demand from the Continent is still strong, and it is reported that large parcels have been purchased for the Far East.

**Home.**—Now that the prices for sulphate ammonia have been fixed for delivery up to the end of May, there is very little interest. Some of the large merchants are booking their requirements for the season, and deliveries to fertiliser manufacturers are fairly brisk.

**Nitrate of Soda.**—The nitrate market continues quiet. Prices are unchanged at 16s. 3d.—16s. 6d. per metric quintal f.a.s. Chile. Although the total sales for the year now reach about 1,600,000 tons, there is every reason for the belief that this has been sold mostly to speculators, and that a portion of the material will come on to the market again. Production is on the increase. When the consuming season is nearer at hand, it is likely that stocks will be readily absorbed.

## Hamburg Chemical Market

HAMBURG, September 2, 1927.

There is no improvement in the state of the chemical market. Only in alkalis was it possible to notice an increased turnover. However, a revival must be reckoned with shortly, for there is an undoubted improvement in certain industries as evidenced by the unemployment returns.

**EPSOM SALTS.**—Whereas the demand has recently been comparatively good, offers are now predominating.

**SUGAR OF LEAD.**—The works reduced their prices by 15s., quoting £38 5s. for white and £37 5s. for brown qualities, f.o.b. Hamburg.

**POTASH LYE.**—The turnover may be considered satisfactory. The works are well employed and many require longer delivery terms.

**SODIUM SILICATE.**—The demand exceeds offers. Goods for prompt delivery have become very scarce and several qualities are unobtainable at the moment. The price for 38/40° Be has been increased to £4 2s. 6d. and for 58/60° Be to £6 10s., f.o.b. Hamburg.

## Calico Printers' Association: Annual Meeting

PRESIDING at the annual meeting of the Calico Printers' Association at Manchester on Wednesday, Mr. L. B. Lee said that industry was hampered greatly by Parliamentary interference, and that an agitation was threatened for the ratification of the Washington Convention, which proposed to limit the hours of all workers in the industries of all countries to 48 per week. In the case of an industry such as theirs this must prove disastrous. The processes of dyeing and printing involved delicate chemical reactions in which time was essential. More than 80 per cent. of their production was for export, and occasions arose when overtime was imperative to enable a particular order to catch the outgoing steamer.

The ordinary dividend of 7½ per cent. was approved, and the report and accounts adopted.

## Scottish Chemical Market

*The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.*

Glasgow, September 14, 1927.

DURING the past week the heavy chemical market has been fairly active, quite good inquiry going around both for home and export business. There are no changes of any importance in prices to record. Arsenic is still scarce for prompt delivery.

### Industrial Chemicals

ACID ACETIC.—98/100%, £65 to £67 per ton, according to quality and packing, c.i.f. U.K. ports; 80%, pure, £37 10s. per ton, ex wharf; 80%, technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystal, granulated or small flakes, £34 per ton. Powder, £36 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC, ICE CRYSTALS.—Still in good demand and quoted price unchanged at 8d. per lb., f.o.b. U.K. ports.

ACID CITRIC, B.P. CRYSTALS.—Quoted price unchanged at 1s. 6d. to 1s. 6½d. per lb., less 5%, ex store. Continental now offered at 1s. 6½d. per lb., less 5%, ex wharf.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. 9d. per carboy. Dearsenicated quality, 6s. 3d. per carboy, ex works.

ACID NITRIC, 80%.—Quoted £23 5s. per ton, ex station, full truck loads.

ACID OXALIC.—Quoted 3d. per lb., ex wharf, prompt shipment from the Continent. Spot material on offer at 3½d. per lb., ex store.

ACID SULPHURIC.—144°, £3 12s. 6d. per ton; 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality, 20s. per ton more.

ACID TARTARIC, B.P. CRYSTALS.—In poor demand, but price unchanged at about 1s. 3d. per lb., less 5%, ex wharf.

ALUMINA SULPHATE, 17/18%. IRON FREE.—Spot material quoted £5 12s. 6d. per ton, ex store. On offer for early delivery at £5 5s. per ton, c.i.f. U.K. ports.

ALUM POTASH.—Lump quality quoted £8 5s. per ton, c.i.f. U.K. ports; crystal meal, 10s. per ton less. Lump quality on spot offered at £9 per ton, ex store.

AMMONIA, ANHYDROUS.—Unchanged at about 9d. per lb., carriage paid. Containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton; powdered, £39 per ton, packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.

AMMONIA LIQUID, 88°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of English manufacture unchanged at £23 to £24 per ton, ex station. Continental on offer at about £19 10s. per ton, c.i.f. U.K. ports. Fine white crystals of Continental manufacture now quoted £17 per ton, c.i.f. U.K. ports.

ARSENIC, WHITE POWDERED.—Still scarce for prompt delivery and price again advanced to about £20 per ton, ex wharf. Spot material quoted £20 15s. per ton, ex store.

BARIUM CARBONATE, 98/100%.—Continental material unchanged at about £7 10s. per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%.—Large white crystals quoted £6 17s. 6d. per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—Contract price to consumers £8 per ton, ex station, minimum 4-ton lots. Spot material 10s. per ton extra. Continental on offer at £7 5s. per ton, ex wharf.

BORAX.—Granulated, £19 10s. per ton; crystals, £20 per ton; powder, £21 per ton, carriage paid U.K. ports.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 to £5 5s. per ton, ex store, with a slight reduction for contracts. Continental quoted £3 12s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works, or £4 12s. 6d. per ton, f.o.b. U.K. ports, for export.

COPPER SULPHATE.—Continental material quoted £23 per ton, c.i.f. U.K. ports. British material on offer at £23 5s. per ton, f.o.b. U.K. ports.

FORMALDEHYDE, 40%.—Unchanged at £38 per ton, c.i.f. U.K. ports. Spot material quoted £39 5s. per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental quoted £2 15s. per ton, c.i.f. U.K. ports.

LEAD, RED.—Continental material now quoted £29 10s. per ton, ex store.

LEAD, WHITE.—Quoted £30 per ton, ex store.

LEAD ACETATE.—White crystals on offer from the Continent at £40 per ton, c.i.f. U.K. ports; brown about £38 15s. per ton, c.i.f. U.K. ports. Spot material on offer at £43 5s. per ton, ex store.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

POTASH CAUSTIC.—88/92%, solid quality, quoted £28 15s. per ton, c.i.f. U.K. ports, minimum 15-ton lots. Under 15-ton lots, £29 10s. per ton. Liquid, £15 per ton, minimum 15-ton lots. Under 15-ton lots, £15 7s. 6d. per ton, c.i.f. U.K. ports.

POTASSIUM BICHROMATE.—Unchanged at 4½d. per lb., delivered.

POTASSIUM CARBONATE, 96/98%.—Unchanged at £27 5s. per ton, ex wharf, prompt shipment. Spot material quoted £28 10s. per ton, ex store; 80/85%, calcined quality, on offer at £20 10s. U.K. ports.

POTASSIUM CHLORATE.—Powdered quality quoted £22 10s. per ton, c.i.f. U.K. ports. Crystal, 30s. per ton extra.

POTASSIUM NITRATE.—Unchanged at £20 7s. 6d. per ton, c.i.f. U.K. ports. Spot material quoted £21 5s. per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 6½d. per lb., ex store, spot delivery.

POTASSIUM PRUSSIATE (YELLOW).—Unchanged at about 6½d. per lb., ex store, spot delivery. Offered from the Continent at 6½d. per lb., ex wharf.

SODA CAUSTIC.—Powdered, 98/99%, £19 7s. 6d. per ton; 76/77%, £15 10s. per ton; 70/72%, £14 10s. per ton, carriage paid station. Minimum 4-ton lots on contract. Spot material, 10s. per ton extra.

SODIUM ACETATE.—English material now quoted £21 per ton, ex store. Continental on offer at £17 5s. per ton, c.i.f. U.K. ports.

SODIUM BICARBONATE.—Refined recrystallised quality, £10 10s. per ton, ex quay or station. M.W. quality, 30s. per ton less.

SODIUM BICHROMATE.—Quoted 3d. per lb., delivered buyers' works. SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station; powdered or pea quality, £1 7s. 6d. per ton; alkali, 58%, £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 10s. per ton, ex store. Minimum 4-ton lots. Continental on offer at about £8 2s. 6d. per ton, ex wharf, prompt shipment. Pea crystals of British manufacture quoted £15 5s. per ton, ex station, 4-ton lots.

SODIUM NITRITE, 100%.—Quoted £19 10s. per ton, ex store.

SODIUM PRUSSIATE (YELLOW).—In moderate demand and price unchanged at about 4½d. per lb., ex store. Offered for prompt shipment from the Continent at 4½d. per lb., ex wharf.

SODIUM SULPHATE (SALTCAKE).—Price for home consumption, £3 7s. 6d. per ton, ex works.

SODIUM SULPHIDE.—Prices for English material as follows:—60/62%, solid now £10 10s. per ton; broken, £11 10s. per ton; flake, £13 5s. per ton; crystals, 31/34%, £7 10s. per ton to £8 5s. per ton, according to quality, delivered your works, minimum 4-ton lots on contract. Prices for spot delivery, 5s. per ton higher for solid, 2s. 6d. per ton for crystals. Offered from the Continent at about £9 5s. per ton, c.i.f. U.K. ports. Broken, 15s. per ton extra.

SULPHUR.—Flowers, £12 10s. per ton; roll, £11 per ton; rock, £11 per ton; floristella, £10 per ton; ground American, £9 5s. per ton; ex store. Prices nominal.

ZINC CHLORIDE.—British material, 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100%, solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports; powdered, 20s. per ton extra.

ZINC SULPHATE.—Continental material now quoted £11 5s. per ton, ex wharf.

NOTE.—The above prices are for bulk business, and are not to be taken as applicable to small parcels.

### A Smoke Abatement Conference

A SMOKE abatement conference, to be attended by about 150 representatives of Metropolitan local authorities and Government departments, will be held in London late in October or early in November, under the chairmanship of Mr. Neville Chamberlain, the Minister of Health. The conference will be devoted mainly to a consideration of the new Anti-Smoke Act, with a view to securing uniformity of administration by public authorities. The question of domestic smoke, which is not dealt with by the measure, is likely, however, to be raised, having regard to the desire of the Ministry of Health that local councils and housing authorities should do all in their power to encourage the use of gas installations and other forms of smokeless heating in place of coal-burning apparatus in new building schemes. One of the chief purposes of the conference will be to settle the question of what is and what is not "avoidable smoke."

## Manchester Chemical Market

[FROM OUR OWN CORRESPONDENT.]

Manchester, September 15, 1927.

If anything there has been a shade more stirring in the Manchester chemical market this week. Inquiry has shown some indication of broadening but a little and actual demand in some cases has been better than for the past few weeks. It is still the fact, however, that orders for the home market are on a smaller scale than what is regarded as normal, and, although there is a certain amount of forward buying, there is no apparent disposition on the part of users to venture very far ahead.

### Heavy Chemicals

In the case of alkali, a moderately active trade is being done at steady prices, offers of this material still being round £6 15s. per ton. A fair business is also being put through in nitrite of soda, and prices are not materially changed since last week, from £19 to £19 2s. 6d. per ton being asked. There is room for considerable improvement in the case of saltcake; demand is slow, and prices easy at about £3 10s. per ton. Glauber salts are also in poor demand at round £3 2s. 6d. per ton. Phosphate of soda meets with a certain amount of inquiry at about £12 15s. per ton. There is little change to report in respect of caustic soda; sales of this are maintained at their recent level, and values are firm at from £14 10s. to £16 10s. per ton, according to quality. Makers are still quoting bicarbonate of soda for the home market at £10 10s. per ton, and the demand for this material is fair. Sulphide of soda is easy although not much changed since last week, and business is of limited extent; 60-65 per cent. concentrated solid is on offer at about £10 10s. per ton, and commercial quality at £8 5s. to £8 10s. Chlorate of soda keeps rather quiet, with current offers at from 2½d. to 2¾d. per lb. Bichromate of soda is in fair request, and prices are maintained at about 3d. per lb. Prussiate of soda is still relatively inactive, with parcels offering at from 4½d. to 4¾d. per lb. Hyposulphite of soda is not attracting any great measure of attention from users, but there has been no easing off in values, commercial quality selling at up to £9 15s. per ton, and photographic at about £16 10s.

Among the potash compounds, a moderate business has been reported in the case of carbonate, and in some instances rather lower prices have been accepted, an average figure to-day being about £26 15s. per ton. There is little change in the position of caustic potash, however; the demand is of fair volume and quotations are firm at up to £31 per ton. Yellow prussiate of potash remains a quiet section, with prices on the easy side at 6½d. to 6¾d. per lb. Chlorate of potash is also in limited demand, and 2½d. per lb. is about as much as is being asked now. Bichromate of potash is unchanged at about 4½d. per lb., and a moderate business has been reported. Permanganate of potash is quiet, but fairly steady at 6½d. per lb. for B.P., and 5d. to 5½d. for commercial.

There is a moderate trade passing in sulphate of copper still, with from £24 15s. to £25 per ton, f.o.b., being quoted in connection with export business. Interest in arsenic is about maintained, with from £17 10s. to £17 15s. per ton at the mines asked for white powdered, Cornish makes. With available offers of acetate of lime still rather scarce, prices in this section of the market are firm, brown selling at from £9 to £9 5s. per ton, and grey at up to £15 15s. The lead compounds are on the easy side, although perhaps not much changed actually, and in all cases the demand is poor. Nitrate of lead is obtainable at £38 per ton, or a shade less, whilst acetate ranges from about £40 per ton for brown to £42 to £42 10s. for white. .

### Acids and Tar Products

Acetic acid remains perfectly steady and a fair trade is being done at about £37 per ton for the 80 per cent. commercial, and up to £67 for the glacial. Oxalic acid is in moderate request, and values are held at from 3½d. to 3¾d. per lb. Citric acid is quiet and easy, and down to 1s. 6½d. per lb. is now being taken. Tartaric acid also is slow, although at about 1s. 3d. per lb. prices are not actually changed on the week.

Pitch is in moderate inquiry for export shipment during the next few months, and values are steady at £4 10s. to £4 12s. 6d. per ton, f.o.b. Creosote oil is steady and fairly active at about 7½d. per gallon. Solvent naphtha is slow

and easy at 1s. per gallon. Carbolic acid crystals are in limited demand, but values are maintained at about 8d. per lb., with crude material still quoted at about 2s. 6d. per gallon.

### General Meeting of British Glues and Chemicals

At the meeting of British Glues and Chemicals on Wednesday, the chairman stated that during the first half of the year coal alone cost the company £38,644 more than in the corresponding six months of the preceding year. The fact that the loss for the whole year only amounted to £13,000 indicated that the company made a profit during the second six months. The losses on coal were aggravated by heavy falls in the selling prices of fats and greases, but minimised by the reduced cost of raw material. Transport charges were heavy, and because of this the geographical position of the factories had been receiving attention. The Newport factory, completed in 1926, was in pursuance of this policy, as also was the purchase of the business of B. Young and Co., Ltd. It was intended to remodel the Bermondsey factory to deal efficiently with London raw material, and this should result in considerable economy in transport charges. Continental competition continued. Though the chairman considered that the corner had been turned, as each month since the coal strike a small profit had been made, extravagant views that big profits would be earned must not be entertained. The company was formed on the basis of 1920 values, and the time was approaching when a revision of capital could be considered.

### An Artistic Brochure

An interesting and artistic historical brochure on "Orr's Zinc White," written by Sir Alfred Robbins, and illustrated by Alexander Jamieson, has just been published by Orr's Zinc White, Ltd., of Widnes. It gives an account of the discovery, history, and production of this famous material, the result of the simultaneous precipitation of barium sulphate and zinc sulphide. Sir Alfred Robbins writes in a fascinating manner about the many phases of the subject, even touching on the controversy on the question of the use of white lead as a pigment which followed the Geneva discussions of the point. Special sections are devoted to qualities, the use of the product in rubber compounding, the works of the company, the Ayrshire barytes mines of the company, etc. The inventor of Orr's Zinc White, and the pioneer of the industry, Mr. John Bryson Orr, has written a short preface, which is reproduced in facsimile form, and the frontispiece is a handsome reproduction of a bas-relief of Mr. Orr. The illustrations are in colour, and in the first, "The Rising Sun," described as the motif of Orr's Zinc White, Ltd., the artist shows, in an inspiring way, the manner in which industry and art merge into one another. Altogether, this brochure can bear comparison with the best of its kind.

### International Holdings and Investment Co. Meeting

The annual general meeting of the International Holdings and Investment Co., Ltd., was held on Friday, September 9. The details of the annual report were given in our last week's issue. The appointment of Mr. R. Bénard, Mr. N. E. Holden, Mr. A. P. Holt, and H.R.H. Duc de Vendôme as directors was confirmed, and Captain F. E. Guest, Mr. A. Kemp, and Mr. G. Popelier, retiring directors, offered themselves for re-election, and were re-elected. The agreement whereby the company sells its undertaking and assets to the International Holdings and Investment Co., Ltd., incorporated in Quebec, Canada, was sanctioned and approved.

### A Highly Sensitive Measuring Instrument

An instrument claimed to be the most refined measuring apparatus in existence, capable of measuring one billionth of an inch, or a millionth of a degree Fahrenheit, is now being exhibited at the laboratories of the Bell Telephone Co., in New York. It was produced by Mr. P. P. Cioffi, who says that it is approximately one hundred times more sensitive than the most delicate instruments used hitherto. Its purpose is the measurement of the contractions and expansions undergone by wires of different composition when magnetised.

## Company News

ONVERWACHT PLATINUM CO.—The net profits for the year ended June 30 last amounted to £90,782, and dividends totalling 17½ per cent. have been declared.

PARKES CHEMISTS.—An interim dividend is announced on the preference shares for the half year ended August 31, at the rate of 6 per cent. per annum, less income tax.

BRITISH OIL AND CAKE MILLS.—An interim dividend on the cumulative preferred ordinary shares of 5 per cent., less tax, on account of the current year has been declared.

BRITISH ALUMINIUM CO.—The directors have resolved that an interim dividend of 4 per cent. (actual) be paid, less income tax, on the ordinary shares, also that a dividend at the rate of 6 per cent. per annum be paid, less income tax, on the preference for the six months ended June 30, 1927, both payable on October 1, 1927.

BURT, BOLTON, AND HAYWOOD.—A final dividend for the year ended June 30, 1927, of 5 per cent. (subject to tax) has been declared (subject to confirmation of shareholders at a meeting to be held at 354, Salisbury House, London, on September 29, at 12 noon) on the ordinary share capital, payable on September 29. (An interim dividend at a similar rate was distributed in March last, so that the total for the year is 10 per cent., the same as for the previous year. Ordinary shares to the number of 47,000 were issued in May last, but the new shares do not rank for the dividend now announced.)

EASTWOODS CEMENT, LTD.—The accounts for the year ended March 31, 1927, show a credit balance of £1,602, being the excess of revenue receipts over the expenditure for the year, and with £653 brought in, it is proposed to carry forward the total of £2,255. The report states that, in accordance with the terms of the issue of 50,000 additional £1 shares at 25s. per share in January this year, the whole of the preliminary and issue expenses and underwriting commission has been written off, and the balance of the share premiums placed to reserve. The profits of the company will thus be available for distribution at an early stage of its history without appropriation under those headings. The Commissioners of His Majesty's Treasury have agreed to increase to £100,000 the amount of their guaranteed loan at 5 per cent. per annum under the terms of the Trade Facilities Acts, but it has not yet been necessary to apply for or take up any part of such loan.

BULMER RAYON CO.—A loss of £32,390 is reported on the operations from the date of incorporation to January 31, 1927, and the directors state that they regret the dividend on the preference shares, due on September 1, 1927, cannot be paid. In their report the directors, as stated in the circular issued to shareholders on April 26 last, say that the loss on trading is largely due to the coal strike, with consequent stagnation of trade, to general market conditions, and to certain unavoidable delays in the development programme. One unit of the plant has been in full production since February last, the second unit will be completed and put into operation by the end of this month, and the installation of the remaining unit, the larger portion of which is already completed, should be finished by January or February next. The company is finding a ready outlet for its product, which is of equal quality to any on the market, and sales are steadily expanding and the company's production is fully sold for some months ahead. The additional finance which was required to complete the second and third units has been largely provided by Smith, Bulmer and Co., Ltd., on terms advantageous to the company, and also by a loan from the company's bankers.

## Mining Congress Handbook

THE Dominion Department of Mines at Ottawa advises the dispatch to the Natural Resources and Industrial Information Branch, The Canadian Building, Trafalgar Square, London, S.W.1, of 500 copies of the Mining Congress Handbook for distribution in this country to parties interested. Copies of the handbook in question will be obtainable shortly, free of charge, on application to the Natural Resources and Industrial Information Branch, at the above address.

## New Chemical Trade Marks

### Applications for Registration

This list has been specially compiled for us from official sources by Gee and Co., Patent and Trade Mark Agents, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks and Designs.

Opposition to the Registration of the following Trade Marks can be lodged up to September 30, 1927.



Registration of this Trade Mark shall give no right to the exclusive use of the word "Solvay."

No. 477,597. Class 1. Alkalies used in manufactures, photography or philosophical research, muriate of ammonia, sodium hypochlorite, bisulphite, sodium hyposulphite, ammonium chloride, ammonium sulphate, ammonium carbonate, ammonium bicarbonate, ammonium nitrate, ammonium sulphocyanide, calcium chloride, calcium carbonate, calcium hypochlorite, calcium sulphite, calcium hyposulphite, calcium bisulphite, calcium sulphate, all the said goods being chemical substances and not for export to and sale in China, Hongkong, Mongolia, Thibet, Siberia, all Chinese territory leased to foreign Powers, French Indo-China and Hainan. Brunner, Mond and Co., Ltd., Winnington, Northwich, Cheshire; alkali manufacturers. February 9, 1927. (To be associated, Sect. 24.)

### NEAKAR.

No. 478,657. Class 1. Carbide of calcium. H. H. Rieser and Co., Norwich House, Southampton Street, High Holborn, London, W.C.1.; merchants. March 10, 1927. (To be associated, Sect. 24.)

### MARACID.

No. 482,817. Class 4. Raw, or partly prepared, vegetable, animal, and mineral substances used in manufactures. Dansk Sojakagefabrik Aktieselskab (a joint stock company organised under the laws of Denmark), 24, Islands Brygge, Copenhagen S., Denmark; manufacturers. July 28, 1927.

## Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

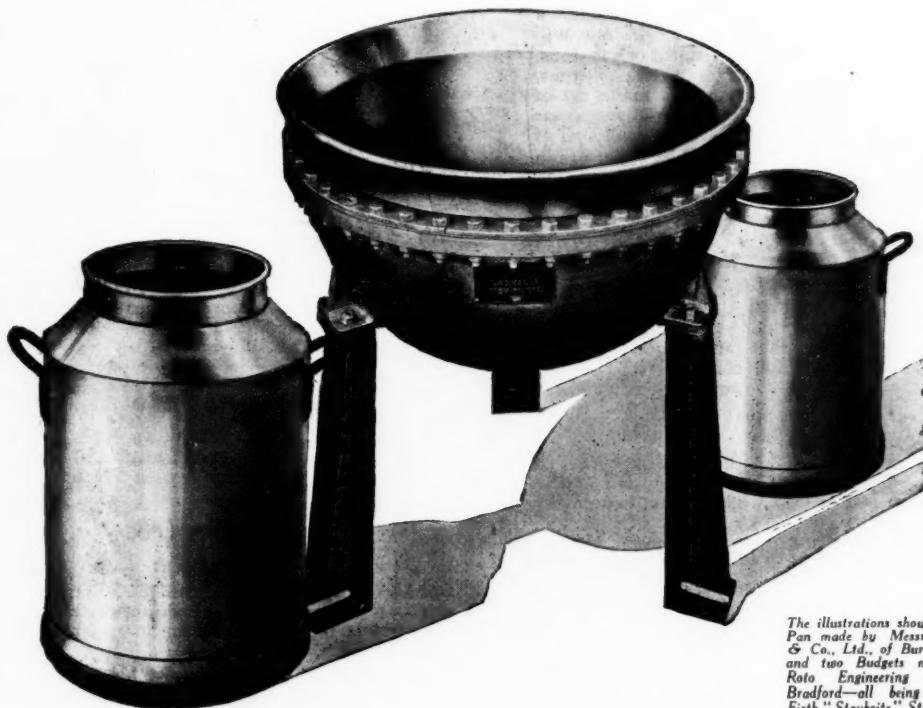
PLANT FOR ELECTRIC PRECIPITATION OF BROWN COAL DUST.—The State Electricity Commission of Victoria are calling for tenders, to be presented by December 12, for plant for electric precipitation of brown coal dust. (Reference B.X. 3800.)

BOILER PLANT EQUIPMENT.—A member of a firm of manufacturers' agents and consulting engineers in Montreal is at present in London for the purpose of obtaining the representation of British makers of engineering equipment with special reference to boiler plants, etc., on a commission or purchase basis. (Reference No. 214.)

## Manchester College of Technology : Chair of Chemistry

The prospectus of the Manchester Municipal College of Technology, which has just been issued, indicates that the chair in the department of chemistry, vacated by the departure of Professor F. L. Pyman, F.R.S. to the research department of Boots, Ltd., has been filled by the appointment of Professor J. Kenner, F.R.S. Professor Kenner, who has been professor of organic chemistry in the University of Sydney since 1924, was formerly on the staff of the University of Sheffield, and is well known for his work on the stereochemistry of the diphenyls amongst other things. In his new appointment Professor Kenner ranks as professor of technological chemistry in the University of Manchester and the College of Technology.

213/3/88



The illustrations show a Chemical Pan made by Messrs. S. Briggs & Co., Ltd., of Burton-on-Trent, and two Budgets made by the Roto Engineering Co., Ltd., Bradford—all being made from Firth "Staybrite" Steel.

## BY WHOSE AUTHORITY ?

With a yield point of about 12 to 15 tons per square inch and an elongation of 55% to 70%, Firth "Staybrite" has exceptional ductility combined with maximum corrosion-resisting qualities, which it possesses to a remarkable degree. It may be cold pressed far in advance of the so-called "stainless iron," and, moreover, presents no difficulties in manipulation, since it may be welded, riveted, soldered and brazed without trouble.

Firth "Staybrite" is supplied in the form of descaled Sheets and Strip, Bars, Plates, Structural Sections, Tubes, Wire Forgings and Castings.

*Write for Booklet C.A.5  
on this subject.*

WHO has authority to buy rust in your business? ..... No one? ..... Absurd? ..... Not at all, sir! ..... Somewhere in your organisation—up in the D.O. or in the Stores or out there in the shops someone is constantly investing in Rust on your behalf—on behalf of your customers. Somebody is putting a rust-begetting material into those vitals of your product known as the "Corrosion Zones"—Zones where mechanisms have to work day in day out under the corroding influence of steam, water, or chemicals even.

Someone is investing in trouble for you—breakdown—failure—delay—lost efficiency. No matter what materials go to the making of your machine—keep them away from the Corrosion Zones and there install details made from Firth "Staybrite" Steel.

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**THOS. FIRTH & SONS, LIMITED, SHEFFIELD**

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**Talc and Soapstone Production in Canada, 1926**

ACCORDING to finally revised statistics just issued by the Mining, Metallurgical, and Chemical Branch of the Dominion Bureau of Statistics at Ottawa, the production of talc and soapstone in Canada during 1926 amounted to 15,767 tons, valued at \$217,195. In 1925, shipments totalled 14,474 tons, worth \$205,835. The Ontario production was made up of talc obtained from deposits in Hastings county and soapstone from the Grace mine near Vermilion Bay. Practically all of the Quebec shipments consisted of soapstone blocks for use in lining the alkali recovery furnaces of sulphate (kraft) pulp mills. Importations of talc or soapstone, ground or unground, into Canada during 1926 were recorded at 4,213 tons, valued at \$89,026, and exports of refined talc totalled 10,823 tons, at \$125,633. The capital employed by the six firms operating in this industry in Canada was reported at \$681,434 in 1926. Employment was furnished to nine salaried employees and 83 wage earners; their total earnings were \$74,634. The expenditure for fuel and electricity was \$25,023. Primary power installation consisted of 24 units rated at 823 h.p.

**Volta Centenary : Congress of Physics**

THE International Congress of Physics, the most important of the meetings held in connection with the celebration of the Volta centenary, was opened at Como on Sunday, September 11, when Professor Garbasso, of the University of Florence, delivered the inaugural address. In the afternoon the delegates paid a visit to the tomb of Volta at Cannago, and afterwards inspected the Volta Exhibition at Villa Olmo, on the outskirts of Como. The sittings of the Congress began on Monday and continued until Saturday. Leading physicists and scientists, including 14 Nobel Prizemen from all parts of the world, took part in the discussions, and technical experts who were attending the International Wireless Congress were present. Great Britain was represented by Dr. F. W. Aston, of the Cavendish Laboratory of Cambridge; Professor A. S. Eddington, Sir Edward Rutherford, and Sir J. J. Thomson, of the University of Cambridge; Professor W. L. Bragg, of the University of Manchester; and Dr. J. A. Fleming and Professor O. W. Richardson, of the University of London.

**"The Confessions of a Capitalist"**

TEN editions in less than two years must surely be a record for a book which professes to deal with dry-as-dust science, and makes claim to be a serious contribution to economic thought. Yet Hutchinson and Co. have just published the tenth printing of Sir Ernest Benn's *Confessions*. The first cheap 3s. 6d. edition, which up to now has been the only economical form of this book, left much to be desired in style and appearance, but the tenth edition now available is in form and size strikingly similar to the first library edition, and at 3s. 6d. is something in the nature of a bargain in books. *The Confessions of a Capitalist* has now been translated into Finnish and published at Helsingfors, this being the eighth foreign or overseas edition. The book has sold freely in German and in French. It has also been published in Danish and in Swedish, in addition to which it has appeared under the auspices of American and Australian publishers.

**The Artificial Silk Handbook**

THE second edition of *The Artificial Silk Handbook*, compiled and edited by Frank Nasmith, F.T.I., editor of the *Silk Journal*, has just been published (John Heywood, Ltd. Pp. 143. 3s. 6d.). It contains notes on the history of artificial silk; production statistics and tariffs; the chemicals used in the industry; the various processes used for the production of the fibre; winding, weaving, and knitting; dyeing, printing, and furnishing; counts; physical tests; terminology; machinery used in the industry, and many other subjects. As compared with the previous edition, the book has been completely revised, and about 30 pages have been added. The statistical matter has been brought up to date, and new information is embodied as regards finishing and printing artificial silk and mixed fabrics; artificial silk velvet; sizing of artificial silk; and spinning staple fibre.

**Commercial Intelligence**

*The following are taken from printed reports, but we cannot be responsible for any errors that may occur.*

**Mortgages and Charges**

[NOTE.—*The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an \*—followed by the date of the Summary, but such total may have been reduced.]*

MANOR VINEGAR BREWERY CO., LTD. (M., 17/9/27.) Registered August 30, two mortgages to Midland Bank, Ltd., securing all moneys due or to become due to the Bank; charged on 34, 36, 38, and 40 and 46, 48, 50, and 52, Gower Street, Aston, with machinery, etc. \*£987. June 12, 1926.

**Bill of Sale**

PHILLIPS, David John, San Marino, 28, Upper Tooting Road, Balham, manufacturing chemist and perfumer, and managing director of a limited company. Dated September 2. Filed September 6. £250.

**London Gazette, &c.****Companies Winding Up Voluntarily**

ANGLO-OVERSEAS CHEMICAL CORPORATION, LTD. (C.W.U.V., 17/9/27.) Fred. Wilcock appointed as liquidator. Creditors' claims to the liquidator at 1, Great Winchester Street, London, E.C.2, by October 15.

SYMES AND CO., LTD. (C.W.U.V., 17/9/27.) Upon the petition of Ayrton, Saunders and Co., Ltd., and of Evans, Sons, Lescher, and Webb, Ltd., creditors of the company, voluntary liquidation to be continued subject to the supervision of the Court, and P. S. Booth, of 2, Bixteth Street, Liverpool, certified accountant, appointed as liquidator by order of the Court, to act jointly with W. S. Deyes, the voluntary liquidator.

**New Company Registered**

W. NELSON SHUTTLEWORTH, LTD., 4, Carver Street, Old Trafford, near Manchester. Registered as a "private" company, on September 7. Nom. capital, £10,000 in £1 shares. To acquire from W. N. Shuttleworth the benefit of Patent No. 16,864 and the invention thereby referred to, and to acquire any patents relating to the manufacture of paper or paper substitutes, leather or leather substitutes, synthetic leather or india-rubber, india-rubber substitutes, gelatine, cellulose, cloth or silk, artificial silk or substitutes, or generally any inventions or discoveries by the said W. N. Shuttleworth or others. Directors: W. N. Shuttleworth, J. Blakey, jnr., A. A. Benjamin.

**Benn Brothers' Other Journals**

THE CABINET MAKER.—Second Lancashire Number: How Lancashire Furnishers Advertise To-day; Final Review of the Manchester Exhibition; Notes from the Home Journals; The Care of Carpets—III.

THE ELECTRICIAN.—"The Electrical Engineer's Library," by E. T. Ellis; Switchgear for Alternating Current; Annual Conference of the Institution of Public Lighting Engineers.

THE FRUIT GROWER.—The Practice of Greasebanding: Why it Should Not be Discarded; The Conservation of Manure; Fruit Growing in Wiltshire.

GARDENING ILLUSTRATED.—Impoverishment of Trees on Lawns; Trees and Shrubs; "Sit Down and Travel—II," by T. Hay, M.V.O., V.M.H.; Garden Pests; The Upkeep of Lawns; The Autumn Rose Show.

THE GAS WORLD.—Public Lighting Engineers in Annual Session—full report; Differential Charges for Gas; Shipping, Engineering, and Machinery Exhibition.

THE HARDWARE TRADE JOURNAL.—Tubes and Fittings Issue: Developments in the Manufacture of Ferrous and Non-ferrous Tubes; Copper Tubes and Fittings for Domestic Use; Hardware Census of Production.

THE TIMBER TRADES JOURNAL.—A Word on Bills of Lading; Forests of the Balkan Peninsula; Cost of Production; Band Saw Cracks.

